Response to Comments
Indiana's 2002 Section 303(d) Draft List of Impaired Waters

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TITLE 327 WATER POLLUTION CONTROL BOARD

List of Impaired Waters
as required by
Section 303(d) of the Clean Water Act

SUMMARY/RESPONSE TO COMMENTS REGARDING THE DRAFT 2002 303(d) LIST OF IMPAIRED WATERS

The Indiana Department of Environmental Management (IDEM), Office of Water Quality is required by Section 303(d) of the federal Clean Water Act to assess its waters for compliance with the state's water quality standards and periodically prepare and make public a list of those waters not meeting water quality standards. On March 1, 2002, IDEM published its 2002 draft 303(d) list of impaired waters with a ninety (90) day public comment period from March 1, 2002 through May 29, 2002 for submission of comments on the draft 303(d) list of impaired waters. IDEM received comments from the following parties during the comment period:

(1) ADVENT Group, Inc. (ADV) representing Ispat Inland and USS Gary Works, both of which endorse the comments submitted by the Indiana Water Quality Coalition.
(2) Al Kuelling citizen of Fort Wayne, Indiana (AK).
(3) American Electric Power (AEP) also representing Indiana-Kentucky Electric Power, both of which are represented by and endorse the comments submitted by the Indiana Water Quality Coalition and the Indiana Electric Utility Water Work Group.
(4) Barnes & Thornburg representing the Indiana Water Quality Coalition (IWQC) comprised of the following members:
Indiana Coal Council, Indiana Builders Association, Indiana Manufacturers Association, Hoosier Energy, Northern Indiana Public Service Company, Jefferson Smurfit Corporation, Cerestar, BP, American Electric Power, and Eli Lilly and Company.
(5) Bethlehem Steel Corporation, Burns Harbor Division, represented by Mark E. Shere, Attorney (BETH).
(6) Bob Spruit, citizen of Bremen, Indiana (BS).
(7) Charlotte Reed, citizen of Michigan City, Indiana (CR).
(8) Cinergy Power Generation Services, LLC (CP).
(9) Elkhart, City of (ELK).
(10) Fort Wayne, City of (FTW)
(11) Grand Calumet Task Force (GCTF).
(12) Hoosier Energy Rural Electric Cooperative, Inc. (HE)
(13) Indiana Farm Bureau, Inc. (IFB).
(14) Indiana Electric Utility Water Work Group (IEUWWG) representing the following utilities who also endorse the comments of the IWQC:
AES-IPALCO, American Electric Power, Cinergy, Hoosier Energy Rural Electric Cooperative, Indiana-Kentucky Electric Corporation, Northern Indiana Public Service Company, Southern Company, and Vectren.
(15) Indiana Office of the Commissioner of Agriculture (OCA).
(16) Indianapolis, City of (INDP).
(17) Izaak Walton League of America, Inc. (IWL).
(18) Plews Shadley Racher & Braun representing the Hoosier Energy Rural Electric Cooperative (HEREC) which is also represented by the Indiana Water Quality Coalition and the Indiana Electric Utility Water Work Group and requests to give endorsement of and to incorporate as its own the comments of the IWQC and the IEUWWG.
(19) Save the Dunes Council (SDC).

Following is a summary of the comments received and IDEM's responses thereto:

Comments General to the Draft 303(d) List

Comment: In general, the draft 2002 303(d) list is acceptable, but the limited resources of IDEM make the Total Maximum Daily Load (TMDL) process almost hopeless. Indiana will spend about five hundred thousand dollars on TMDL staff this year and another one million dollars for contracts for about eight TMDLs. With the draft 2002 303(d) list containing a total of four hundred eighty-five impaired waters, the TMDL process will not meet the requirements of the Clean Water Act unless IDEM finds a way to increase staff and financial resources. (SDC)

Response: We are working to maximize our current available resources and will complete the TMDLs per our 303(d) list as these resources allow. TMDL staff are working to prepare for many more than the TMDLs slated for completion for this year.

Comment: IDEM must meet the public participation requirements of the TMDL process. Complaints have arisen that the TMDL process on some waters, for example Fall Creek, is going forward but no public meetings have been held. The TMDL for the Grand Calumet River has not had a public meeting other than that of the Technical Team since the process started three years ago. (SDC)

Response: According to the IDEM TMDL Strategy public meetings are to occur during crucial phases of the TMDL process. An informational public meeting was held regarding the Grand Calumet River-Indiana Harbor Ship Canal TMDL in April of 1998 at the Citizens Advisory for the Remediation of the Environment (CARE) Meeting. Significant numbers of stakeholder advisory group meetings were held during Phase I and early Phase 2 of the project as suggested in the strategy. Stakeholder group meetings and communication will continue to occur throughout the development of the TMDL. Additional Public meetings are not called for in the strategy until release of the draft TMDL. We are currently working on modifying our TMDL strategy regarding public outreach that will enable us to conduct public outreach within our current staffing levels.

Concerning TMDLs that were contracted out during the late spring or early summer of 2002, IDEM is currently in the process of getting stakeholder groups formed and information out to the public on these TMDLs. In fact, on September 17, 2002, IDEM held a kickoff meeting for stakeholders and the general public for Fall Creek, Pleasant Run, and the West Fork White River TMDLs.

Comment: IDEM has done a better job of raising awareness of impaired waters. The ninety day comment period on the draft 2002 303(d) list is appreciated, and, as well, comments provided at the monthly TMDL meetings should also be considered when making decisions on listings of impaired waters. It has been disappointing that IDEM did not record comments made at the public meetings held during the comment period for the draft 303(d) list. Many people will not submit additional comments during the comment period because they believed comments made at the public meetings would also be considered as comments to the draft 303(d) list. The TMDL workgroup process has been valuable, and though the workgroup has stalled due to the confusion and delay from postponement of the new EPA TMDL rules, IDEM should consider the efforts of the workgroup when finalizing the 2002 303(d) list. (SDC)

Response: IDEM considers all comments whether or not they are made during an official comment period that was announced in the Indiana Register. The comments that are summarized in a "Summary/Response to Comments" document are those that were received in writing during the comment period as established in the Notice published in the Indiana Register.

Comment: The increased number of waterbodies listed on the 2002 draft 303(d) list is a concern. The list of impaired waterbodies needs to be based on actual data that can be qualified and quantified rather than on projected data, modeling, or subjective evaluations such as cursory

visual inspections. (IFB, OCA)

Response Waterbodies are only included on Indiana's 2002 303(d) list (Category 5) if actual data exists that shows there is an impairment within a waterbody or assessment unit as defined by EPA. Projected data, modeling, and/or subjective evaluations such as cursory visual inspections are not used for 303(d) listing purposes.

Comment: Due to the large listing of new parameters in the streams within Marion County, the City of Indianapolis will continue to analyze the validity of these new listings based on data available to the city and requests to be able to submit additional comments to support findings that some of the new listing may not be warranted. (INDP)

Response: IDEM considers all comments whether or not they are made during an official comment period that was announced in the Indiana Register. The comments that are summarized in a "Summary/Response to Comments" document are those that were received in writing during the comment period as established in the Notice published in the Indiana Register. IDEM will continue to use data from outside sources for 303(d) listing purposes if the data meets specific Quality Assurance/Quality Control requirements.

Comment: Urban streams, especially those with impairments influenced by urban storm water run-off and subject to water quality improvements from implementation of the NPDES storm water Phase II program, should be categorized as threatened waters rather than impaired and allowed to undergo reassessment after implementation of the NPDES storm water Phase II first permit cycle of 2003 to 2008. The TMDL process would be a second compliance oriented regulatory program applied to water quality and may be unnecessary if the storm water program is given opportunity to produce results. The dramatic increase of the number of impaired stream listings within the Maumee River Basin, especially concerning several stream segments within the City of Fort Wayne's jurisdiction, comes despite regional partnerships, local watershed management teams, and the city's efforts toward water quality improvement. The city's combined sewer overflow (CSO) long term control plan is before EPA for approval, and the city is moving forward with implementation of over one hundred million dollars in collection system and wastewater treatment capacity improvements designed to minimize the CSOs entering receiving streams. Storm water management programs are being developed by Fort Wayne, the City of New Haven, and Allen County to meet the requirements of the NPDES storm water Phase II rules. These very significant water quality improvement programs put into question the assumptions that the Fort Wayne area urban streams, as identified on the draft 2002 303(d) list with impairments for E. coli, dissolved oxygen, nutrients, and impaired biotic communities, will not be dramatically improved to the point of meeting water quality standards. (FTW)

Response: At this point, IDEM has no information that indicates that certain streams listed for E. coli are impaired solely due to CSO issues or other urban storm water run-off. However, in many places, CSOs and/or urban runoff may be the primary contributor to the problem. In these cases, streams will stay on the 2002 303(d) list, but may be scheduled for TMDL development at a later date to give these other pollution control programs such as the CSO long term control plan time to have a positive impact on water quality.

Comment: In the spring of 2000, the City of Fort Wayne held six to eight public meetings about a sizable tax increase, and afterward the media reported that not a single person attended the meetings to complain about the tax increase. This indicates that the citizenry want the improvement programs for our rivers and streams. They want water quality improvement and the cessation of sludge dumping to occur now. (AK)

Response: The water quality improvement projects that Fort Wayne and other communities are undertaking in order to meet water quality standards, do often have sizeable costs associated with them. The goal is for these projects is to have the waterbodies meet the water quality standards.

Comment: Excessive pumping of polluted water into ditches that contaminate the Yellow River and lakes in Marshall County must be stopped before it's too late. (BS)

Response: IDEM continues to move forward with programs to improve on the water quality of Indiana's surface waters with the goal that water quality standards will be met.

Comment: There seems to be little control on additional discharges of pollutants to impaired waters which is an activity prohibited by the Clean Water Act except under very limited circumstances. IDEM has allowed discharges to Publicly Owned Treatment Works, and therefore to waters of the United States, without regard to this prohibition. IDEM should clearly state that increases of pollutants to impaired waters that are impaired by the pollutants in the increased discharge will be prohibited and should extend the prohibition to nonpoint sources as well. (SDC)

Response: IDEM is currently moving forward with the development of Phase II storm-water rules for municipalities and the CSO program.

Comment: Much more effort needs to be made toward correcting nonpoint source pollution. Nonpoint source pollution is especially critical in Northwest Indiana, and now that Indiana has submitted an application to become a Coastal Zone Management state under Section 6217 of the Coastal Zone Management Act, the state must develop a nonpoint source plan. This work will be the responsibility of the Indiana Department of Natural Resources (IDNR), but it should be coordinated with other programs, especially IDEM's TMDL program, to help restore Indiana's coastal resources. (SDC)

Response: The Indiana Department of Environmental Management also recognizes and agrees with the need to coordinate the State's nonpoint source programs. The primary responsibility for this coordination lies with IDEM's Watershed Management Section which administers the Nonpoint Source Pollution Management Plan for Indiana. This Plan and the Annual Report on the State's Nonpoint Source programs can be found on the Internet at http://www.in.gov/idem/water/planbr/wsm/nonpoint_1.html. The Watershed Management Section has been coordinating closely with the Department of Natural Resources Division of Soil Conservation on multiple programs, including the Coastal Zone program, Lake and River Enhancement grant program, and the education programs such as Riverwatch and Project WET. In addition, the Watershed Management Section and TMDL program staff are also in close coordination, meeting monthly at internal TMDL coordinating sessions and passing information to each other about TMDL development and active local watershed groups. The Watershed Management Section also helps to employ four Natural Resources Conservation Service liaisons that work closely with local groups on watershed management issues, and are also coordinating with the TMDL staff.

Comment: The data used by IDEM to make 303(d) listing decisions should be openly available to the public upon request so that third party reproduction can occur to check the validity of IDEM's sampling as well as allow individual self-monitoring. (IFB)

Response: Waterbodies are only included on Indiana's 2002 303(d) list (Category 5) if actual data exists that shows there is an impairment within a waterbody or assessment unit as defined by EPA. Projected data, modeling, and/or subjective evaluations such as cursory visual inspections are not used for 303(d) listing purposes. The data is available, and will be provided upon request.

Comment: The development of Total Maximum Daily Loads (TMDL) should be driven from local residents and developed at the watershed level. A TMDL process cannot begin until the impairment source has been identified. For example, the agricultural community believes the science is available today to distinguish between human and animal E. coli and even to determine the species of animal. Using a generic E. coli standard does not differentiate between commonly found E. coli and pathogenic strains. Sample testing using DNA or genome typing methods to

identify actual sources of E. coli should be conducted so that erroneous blanket enforcement can be avoided and focused solutions can be applied. (IFB, OCA)

Response: IDEM has developed a Total Maximum Daily Load Program Strategy. This document can be found on IDEMs web page under the following address: http://www.IN.gov/idem/water/assessbr/toxchem/webtmdlg.pdf. In each stage of the TMDL process public input and participation is an integral part of the strategy. IDEM recognizes the great value that can be brought to a project if local entities are included at the earliest possible time.

Because of the expense and resources involved with DNA or genome typing methods for E. coli, these methods are not the desired methods for listing purposes. However, when it comes to assigning pollutant loads for an E. coli TMDL, if there are any questions concerning sources of the pollutant, IDEM will work with the parties involved to insure fair and equitable distribution of the waste load allocations.

Comment: Water quality standards need to be met at all times and all flows; therefore, more attention needs to be give to determining the daily load component of a TMDL. Critical flows such as low flow, high flow, or seasonal flow affecting spawning season must be considered. (SDC)

Response: When developing a TMDL, the critical conditions, within reason, are what drive the pollutant load allocations.

Comment: Actions by IDEM and others to find the source of and remedy waterbody impairment should occur with more immediacy than provided by the lengthy and laborious TMDL process. (IWL)

Response: Depending on the situation, IDEM has several programs that address water quality issues. Some situations allow for more immediate solutions to the problem. However, due to the complicated nature of many TMDLs, and the necessity to give equitable treatment to all pollutant sources, if the TMDL is the tool of choice to address the situation, it may by necessity be lengthy and laborious. To further remedy such situations, IDEM and other states are continually looking for ways to simplify and accelerate the TMDL process.

Comment: The length of the 2002 draft 303(d) list and the number of impaired waters is staggering; yet, the list still does not supply information such as: (1) how does one determine if a waterbody is still on the list and from what previous year of listing? (2) where is it stated what is the probable source of the parameter of concern? And (3) what determination was used to demonstrate good cause for deletion of a waterbody that was previously on the 303(d) list but now has been removed and what was the corrective action responsible for removing the parameter of concern? (IWL)

Response: 1) Beginning in 1998 IDEM assigned a unique identifier, the 303(d) number, for each of Indiana's 303(d) listed waters. This number can be used to determine when the waterbody was first listed. 2) Possible sources of the contamination may be noted in field sheets or notes taken by environmental professionals. However, sources are not published until it has been proven that they are indeed the source of the pollutant of concern. 3) Waterbodies are only delisted when:

1) New data indicates that water quality standards are now being met for the waterbody under consideration
2) The listing methodology has changed, and the waterbody under consideration would not be considered impaired under the new methodology
3) A change has been made to the states water quality standards which would indicate that a listed waterbody was now considered supporting of designated uses
4) An error is discovered in either the sampling, testing, or reporting of data that led to an inappropriate listing

5) If it is determined that another program, besides the TMDL program, is better suited to address the water quality problem, or the problem is determined not to be caused by a pollutant.
6) A TMDL has been completed, and the waterbody is expected to meet water quality standards after implementation of the TMDL.

Additionally, IDEM has developed a listing methodology that will accompany the list submission to EPA.

Comment: The parameters called "impaired biotic communities" and "organic enrichment" need to be defined. (IWL)

Response: Waterbodies listed under the heading "impaired biotic communities" relate to the narrative standard in 327 IAC 2-1-3(a)(2) and 327 IAC 2-1.5-5(a)(2), that "all waters…will be capable of supporting a well-balanced, warm water aquatic community…" If the habitat indicates that a well-balanced, warm water aquatic community should be present, and it is not, then the stream is listed for "impaired biotic communities". "Organic enrichment" is used mostly when a biological response indicates organic enrichment (possibly sewage). These parameters are usually associated with the "aquatic life" designated use.

Comment: Impairment needs also to consider parameters of "contaminated sediments" and "suspended solids". (IWL)

Response: Any parameter that results in a violation of an existing water quality standard for a pollutant is considered when determining if the waterbody is impaired.

Comment: Why does the 303(d) list not make a correlation to the toxic release inventory (TRI)? At a minimum, heavy metals and bioaccumulative chemicals of concern should be included on the impaired waterbodies list. (IWL)

Response: Clean Water Act (CWA), Section 303(d) requires each state to identify waters of the state that do not meet the water quality standards for designated uses. Toxic Release Inventory (TRI) on the other hand requires reporting releases of toxic chemicals to water and the environment in total mass amounts (lbs/some time period in days, month or year) that could not be easily correlated to an existent pollutant chemical concentration in the water column to identify an impairment for 303(d) listing and TMDL development.

Comment: How have the listed impaired waterbodies been correlated to the one hundred five (105) CSO communities, Indiana's beach program, fisheries decline, Department of Natural Resources (IDNR) fish stocking, designated outstanding state resource waters and exceptional use waters, drinking water supplies, the Indiana Drainage Code, regulated drain ditching and habitat destruction, and pesticide parameters? (IWL)

Response: Clean Water Act (CWA), Section 303(d) requires each state to identify waters of the state that do not meet the water quality standards for designated uses. This includes water quality impairments caused by discharges from point sources (permitted NPDES discharges and CSOs) as well as discharges from nonpoint sources. Water quality assessment for the 305(b) report and the 303(d) listing of impaired waterbodies do take into consideration IDNR fishery surveys and stocking records, information supplied by IDEM's Drinking Water Branch and information collected by IDEM's own Pesticide Monitoring Program for 150 plus pesticides.

Comment: Section 303(d) of the Clean Water Act requires identifying the source of impairment and correcting the impairment within a two year interval not the fifteen and twenty year schedules the 2002 303(d) list shows as TMDL schedules. (IWL)

Response: Since the Clean Water Act does not clearly define the timeline for TMDL development, EPA, in response to the Federal Advisory Committee Act (FACA) Committee's recommendations, issued guidance for States to develop expeditious schedules of not more than 8 – 15 years; including a priority ranking of TMDLs targeted in the next two years in accordance with 40 CFR 130.7(b)(4)

Comment: The one hundred five (105) CSO communities contaminating their own waters and the E. coli related beach closings indicate the need to give top priority to identifying and correcting the sources of E. coli impairment. IDEM needs to recognize that elevated E. coli counts are caused by many sources beyond direct discharge of sewage. These include sediment, nutrient, and pesticide loads, deforested streams, and destroyed wetlands that all create poor stream conditions that in turn grow and sustain high E. coli counts. Another new finding is that septics can be a significant source of mercury. (IWL, SDC)

Response: E coli contamination in surface waters continues to be a high priority for IDEM in the TMDL program as well as other programs. IDEM will continue to strive to correct water quality problems related to other bacterial contamination.

Comment: Since many waters are impaired for E. coli, a method to develop E. coli TMDLs should be developed. If a template can be developed, it could be used at many locations. (SDC)

Response: IDEM agrees and believes that after the completion of this first set of *E. coli* TMDLs, we will have a better idea on what exactly needs to be in an *E. coli* TMDL, and the best approach for getting them completed in an accurate and efficient manner.

Comment: What interaction does IDEM have with IDNR and county commissioners and surveyors about the impairment consequences of their activities? For example, on a monthly basis there are lake and stream alteration permits issued by the IDNR Division of Water for activities that damage waters without consideration of the 303(d) list's intended purpose to make these waters cleaner. Similarly and without consideration of impaired waters, county drainage boards are using the Indiana Drainage Code to deforest seventy-five feet on both sides of a waterbody and these projects are rarely re-vegetated. It is a counterproductive use of Section 319 funds to improve these waterbodies that are or will be impaired by activities allowed by IDNR and the counties. (IWL)

Response: IDEM , IDNR and the county commissioners, county drainage boards, and county surveyors are often all involved in various permits or authorizations issued for stream or lake alterations. IDNR often must issue a Construction in a Floodway Permit for streambed or bank alterations and permits under the Public Freshwater Lake law for alterations to the bed or shoreline of public freshwater lakes. IDEM must often issue Clean Water Act Section 401 Water Quality Certifications for these activities if a Clean Water Act Section 404 permit is needed from the U.S. Army Corps of Engineers. The county commissioners/county surveyors are often the entities requesting these permits. Senate Enrolled Act 368 requires that when these permits are needed, all parties involved must meet and discuss the conditions that will be placed on any permits that may be required. Thus, these agencies do have close interaction on the these activities when permits are needed. As stated by the entity commenting, the Indiana Drainage Code gives the county drainage boards a seventy-five foot easement on each side of a "regulated drain" that can be maintained so as to allow access for drain maintenance. Thus, county drainage boards have the authority under state law to remove structures, crops, vegetation and other obstructions which may prevent maintenance of these drains. If removal of these obstructions requires a permit, then the various agencies involved must meet with the drainage boards/surveyor to discuss the project and the permitting agencies involved can place restrictions on the activity so as to reduce environmental impacts to the extent possible and still allow the maintenance activity. However, these activities are often conducted in a way that the activity does not trigger the need for a permit, i.e., removal of vegetation using non-mechanical means (hand tools), and the agencies do not have the opportunity to place conditions on these activities. IDEM will continue to further strengthen watershed management planning and implementation with IDNR and other organizations.

Comment: It is astonishing to find that every outstanding state resource water (OSRW) in

Indiana appears on the list of impaired waters. One of the pollutants of concern on the 2002 303(d) list as well as since 1998 for all the OSRWs is E. coli. This is a four-year span with no correction to the impairment. The OSRWs are also impaired for other parameters for the four-year span without correction to the impairment. (IWL)

Response: IDEM continues to move forward to improve on the water quality of Indiana's surface waters with the goal that water quality standards will be met. Because of the number of waterbodies requiring TMDLs, a priority scheme has been developed, and TMDL development will follow this schedule.

Comment: It is not understandable that no Indiana waters are listed as impaired for algae. The 303(d) list produced by Michigan listed the Galien River as impaired for algae. This river starts in Indiana. (SDC)

Response: Nuisance algae are often a symptom of a deeper problem such as nutrient loading. Many of these impairments may be captured under parameters such as "nutrients" or "impaired biotic communities". To date, at least ten (10) waterbodies are listed as impaired for algae. Four of these are creeks/ditches (#43, 259, 268, & 341), and six are drinking water reservoirs (#464, 470, 476, 477, 479, & 480). Sampling of algal communities in rivers and streams was only recently reinstated at IDEM (through a grant with USGS), although it has occurred in the lake-monitoring program off and on for about 30 years. As this sampling continues, more waterbodies may be listed under this specific parameter.

Legal Comments

Comment: The Water Pollution Control Board (WPCB) has not complied with its statutory obligation under IC 13-18-2-3(b), originated with Senate Enrolled Act 431, to adopt by rule a methodology to be used in identifying waters as impaired and criteria for including and removing waters from the list of impaired waters. IDEM has not initiated a rulemaking to present a methodology to the WPCB, and, without such methodology, IDEM has provided insufficient information to support any of the listings on the draft 303(d) list of impaired waters. (IWQC, BETH, IEUWWG, IFB)

Response: IC 13-18-2-3(b), added by SECTION 16 of SEA 431, requires the WPCB to adopt the rule mentioned in the comment. That subsection contains no deadline for the adoption of the rule. The parties involved in drafting SEA 431 during the 2000 legislative session were aware that a 303(d) list is due biennially in even-numbered years. Therefore, IC 13-18-2-3(a) was specifically drafted to require only that the list be published in the Indiana Register and made available to the WPCB and for public comment before submission to EPA because it was recognized that the rulemaking procedures are lengthy and time-consuming.

While the comment claims that IDEM is "without such [listing] methodology" because the rulemaking required by SEA 431 hasn't yet occurred, IDEM does have a methodology, and has discussed and presented that methodology as part of the current listing.

Subsection (c) of SECTION 28 of SEA 431 requires IDEM to appoint a working group of stakeholders with respect to the implementation of TMDL requirements as described in subsection (b). This workgroup has been meeting since October of 2000, and has begun addressing many issues concerning implementation of the TMDL program, including methodologies and criteria. Recommendations from the TMDL Advisory Group were incorporated into the 303(d) listing process and are described in the methodology.

Also, the Federal TMDL rule has been delayed which also has impact on the efficacy of moving forward with a state rulemaking until the Federal TMDL rule is finalized.

Comment: In the absence of the WPCB rule required by IC 13-18-2-3(b) concerning methodology and criteria, IDEM's 303(d) Notice is illegal; therefore the intent by IDEM to submit the 303(d) list to EPA and to develop Total Maximum Daily Loads (TMDL) for the

pollutant causing the impairment of each listed water should not be allowed to proceed. (HEREC)

Response: The rulemaking required by IC 13-18-2-3(b) contains no deadline or prohibition that would affect submission of the list. As stated in the previous response, there is no statutory requirement that development or submission of the current 2002 303(d) list be delayed until the methodology and criteria rulemaking occur. In fact, SEA 431 requires IDEM to prepare and submit the 303(d) in accordance with 40 CFR 130.7. Failure to publish the list due in 2002 would be a violation of federal and state law.

Comment: IDEM's response in 1998 to the comment submitted to that year's draft 303(d) list concerning the need to have rulemaking to produce the 303(d) list was that the list is "not required to go through the rulemaking process by either state or federal regulations because it does not have the effect of law". The 303(d) list is the first step in what will result in the imposition of new TMDL to listed waters and, ultimately, new and more stringent effluent limitations on dischargers to those waters. The 303(d) list is, therefore, a rulemaking meeting the definition of a rule as established by IC 4-22-2-3(b) in that it is IDEM's interpretation of the Clean Water Act and state responsibilities under Section 303(d). The 303(d) list clearly has general application by impacting dischargers of water pollutants throughout the state and imposing new regulatory requirements. (HEREC)

Response: IDEM reiterates it's response to a similar comment that was made on the 1998 303(d) list. Neither the draft nor final 303(d) list has the effect of law and therefore are not required to go through the rulemaking process. The list itself does not impose any additional or new requirements on any discharger in the state. The list ultimately may be used to assist in determining which, if any, permits need to be modified and to what extent; however, listing is not permanent and some waters will likely be delisted before a TMDL is actually developed. Development and publication of the list is not a final department action of particular applicability that determines the legal rights, duties, privileges, or other legal interests of a specific person. If, after development of a TMDL for a water listed, IDEM determined that an NPDES permit modification would be appropriate, then that action could be appealed under the existing appeals procedure in state law. However, first the permittee and the public will, at a minimum, have the legal right to comment on any proposed permit changes pursuant to 327 IAC 5-3-9.

In *Monongahela Power v. Chief, Office of Water Resources,* the West Virginia Supreme Court recently found that "a 303(d) list submitted to EPA … is not a final disposition of a matter. Instead, it is essentially a recommendation and has no force and effect…."

Comment: In its response in 1998 to the comment submitted to that year's draft 303(d) list concerning the right to appeal the final 303(d) list, IDEM stated, "An appeal process is not appropriate for the draft (or final) 303(d) list because development and publication of the list is not a final department action of particular applicability that determines the legal rights, duties, privileges, or other legal interests of a specific person." However, the final list will be submitted to EPA for approval and cannot thereafter be changed by IDEM without EPA's permission. Thus, the final list is binding upon the state and the regulated public and clearly impacts the rights, duties, privileges, and legal interests of regulated entities. (BETH)

Response: The listing does not directly impact in any way the rights, duties, privileges or legal interests of regulated entities. The listing of a water body as impaired may eventually lead to the development of a TMDL for the waterbody and an NPDES permit modification or other control measure for a regulated entity. The listing of a waterbody as impaired does not itself do that, and is therefore not a final department action.

Comment: In *Indiana Department of Environmental Management v. AMAX, Inc.*, 529 N.E.2d 1209 (Ind. Ct. Appl. 1988), the Indiana Court of Appeals held that the adoption of rules that have the force of law without first proceeding through the rulemaking process invalidates the

rule. The *Amax* decision was recently applied by the Marion Superior Court in the case of *Twin Eagle v. IDEM*, Marion Sup. Ct. The analysis of Judge Keele in that case applies with equal force to the 303(d) list noticed in the Indiana Register, and IDEM therefore faces potential legal challenges if the 303(d) process proceeds. The proper procedure is to wait for the WPCB to promulgate the required rule and then issue the new 303(d) list in accordance with that rule and the other rulemaking requirements. (HEREC)

Response: IDEM has already stated its position that the 303(d) list is not a rulemaking, and the 303(d) list does not have the force of law. Delaying the 303(d) list past the current year would violate the requirement of 40 C.F.R. 130.7(d) that the list be submitted to U.S. EPA during every even-numbered year. It would also violate IC 13-18-2-3(a), which requires IDEM to prepare a list of impaired waters for the purpose of complying with federal regulations implementing section 303(d) of the CWA.

Appeal of Judge Keele's decision, which he stayed, is currently pending before the Indiana Supreme Court. Publication of the 303(d) list is a federal requirement and the fact situation is entirely different than the facts of either Twin Eagle or AMAX.

Comment: In so far as IDEM's brief explanation of the methodology used to develop the 2002 draft 303(d) list is an attempt to satisfy IC 13-18-2-3(b), it fails to comply with the rulemaking requirements of IC 4-22-2 and furthermore is invalid because IC 13-18-3 allows only the WPCB, not IDEM, to be the entity responsible for final adoption of rules for the control and prevention of pollution in waters in Indiana. IDEM, therefore, has no authority to establish the methodology and criteria applicable to the 303(d)-designation process. (HEREC)

Response: IDEM has not claimed to have adopted or otherwise established through rulemaking the methodology and criteria applied to the 303(d)-designation process.

Comment: IDEM has not complied with its obligation under federal law, 40 C.F.R. 130.7(b)(6)(i), that requires the state to submit a description of the methodology used to develop the 303(d) list of impaired waters when the list is provided to EPA for review and approval. It only makes sense that IDEM would provide the methodology for public review simultaneously with the publication of the list of impaired waters so that stakeholders may understand how IDEM evaluated the data and information available for waterbodies to determine which waters should be placed on the list. (IWQC)

Response Since IDEM has not yet submitted the state's 303(d) list for 2002 to U.S. EPA, IDEM cannot be in violation of a requirement that it submit its methodology along with the list. IDEM intends to comply with the federal requirements to submit a description of the methodology when the list is submitted. This methodology includes incorporation of the recommendations from the TMDL advisory group. In addition IDEM will be making the list and the methodology available to the public in anticipation of a presentation of said materials to the Water Pollution Control Board (WPCB). IDEM also plans on conducting a public meeting on this issue before the WPCB meeting.

Comment: Section 26 of SEA 431 states that IDEM shall develop and maintain a quality assurance program (*sic,* project) plan and information management system to assess the validity and reliability of the data used to support the listing of impaired waters. IDEM developed a surface water quality assurance project plan ("QAPP") in July 1996 and specific QAPPs are associated with specific monitoring programs. However, IDEM's web site does not contain or even refer to IDEM's QAPP. It does not appear that the QAPP is readily available for public review. (IWQC)

Response: Section 26 of SEA 431 requires the data from the information management system to be readily available but does not state the QAPP need be on an IDEM web site. IDEM complies with the Public Records Act and the QAPP would be made available if requested.

Comment: Section 28 of SEA 431 requires IDEM to establish a TMDL stakeholder group

to develop a strategy for addressing TMDLs in the future. IDEM and the stakeholder group are encouraged to communicate the group's work to the agricultural community since the TMDL process is moving forward. (OCA)

Response: The workgroup required by SEA 431 has been meeting since October of 2000, and has as one of its members a representative of the agricultural community. IDEM encourages any interested member of the agricultural community to contact the agricultural representative or IDEM to stay informed of the workgroup's progress. IDEM welcomes the participation of all interested parties.

Comment: As a matter of Indiana law, the fish consumption advisory listings suffer a legal deficiency because they fail to meet the "ascertainable standards" test that has been established by Indiana courts for judging administrative actions. The Indiana Court of Appeals has stated this test as follows:

> **Administrative decisions must be based on ascertainable standards to ensure that agency action will be orderly and consistent. The test to be applied in determining whether an administrative agency regulation can withstand a challenge for vagueness is whether it is so indefinite that persons of common intelligence must necessarily guess at its meaning and differ as to its application. (Indiana State Ethics Commission v. Nelson, 656 N.E.2d 1172 (Ind. Ct. App. 1995))**

The fish consumption advisory listings clearly do not meet this test. They are based on narrative standards, and IDEM has established no objective procedure for translating the narrative standards into ascertainable water quality targets. (IWQC)

Response: Fish consumption advisories are not "administrative actions" and are therefore not required to meet an "ascertainable standards" test. Advisories are issued as warnings to the public about the risks involved in consuming certain types and/or quantities of fish in Indiana. An advisory does not affect the legal standing of any party, nor does it proscribe activity by a regulated entity. Fish consumption advisories are not based on narrative standards, but are instead based on a risk calculation derived from a numeric threshold for the presence of certain substances in fish tissue.

Comment: It seems that too often, and again in developing the draft 2002 303(d) list, Indiana forgets that narrative water quality standards apply at all times and at all places. 327 IAC 2-1-6 and 327 IAC 2-1.5-8 both describe narrative standards that waters are to be free from the specified contaminants. Applying this "free from" standard would increase the list of impaired waters. (SDC)

Response: IDEM considered the narrative standards when it developed the proposed list.

Comment: IDEM has failed to abide by federal regulation, 40 CFR 130.22(a), that requires the state to assemble in the course of preparing the list of impaired waterbodies all existing and readily available water quality related data and information. On May 15, 2002, Bethlehem Steel made a telephone request, later followed by a written request, to IDEM for copies of the data supporting the decision to list as impaired several waterbodies in the vicinity of the Burns Harbor Division but received from IDEM only partial data limited to four parameters in a raw form with no explanation as to why that data was found to be significant toward a listing of impairment. Additionally, IDEM has violated state law, IC 5-14-3-9(b), that requires this type of public information to be provided within seven days of receiving a written request. (BETH)

Response: IDEM has utilized all existing and readily available data in the preparation of the list, and has supplied that data to the interested party as the data has become available. The information request received by IDEM from the interested party merely asked for the data, it did not include a request for an explanation as to why the data was considered significant. IDEM has

not violated IC 5-14-3-9. The statute does not require that a public record be provided within seven days of a request, it requires that IDEM respond to the request within seven days and, if need be, inform the requesting party that the information will be made available as soon as possible. IDEM did not deny disclosure of the requested information and has made available the information requested.

Comment: IDEM's failure to provide reasonable availability of data supporting the waters identified in the 303(d) list renders the comment period essentially meaningless and, therefore, is also a failure to comply with the requirement of IC 13-18-2-3(a)(2) to provide at least a ninety day comment period. (BETH)

Response: IC 13-18-2-3(a) requires IDEM to publish the list of impaired waters and make the list available for public comment for at least 90 days, which IDEM has done. IDEM has also made available upon request the data used to support the inclusion of waterbodies on the list.

Indiana's Draft Listing Methodology

Comment: IDEM's draft listing methodology is deficient in many respects. A state's listing methodology should provide an in-depth explanation of the types, quality, and quantity of data necessary to conduct a thorough evaluation of its water quality standards. It should also explain how the assembled data and information will be evaluated to make impairment determinations. Of the twenty-one (21) sources of data that IDEM has used according to its draft listing methodology, some of the data may provide acceptable historical information but are otherwise too old to be considered relevant without follow up confirmation that the data reflect current conditions. For the six (6) types of data that IDEM used to form the basis for waterbody assessments, there is no accompanying description of how the data types will be weighed for assessment purposes, such as, will a marginal exceedance of a numeric criterion lead to listing, and, if so, why? (IWQC, IEUWWG, OCA)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". The completed listing methodology will be submitted to the US EPA, along with the 2002 303(d) list.

Comment: Can impairment be based on a single data point that is contradicted by a large body of other data? At what point does IDEM deem the available data sufficiently reliable and sufficiently representative of typical conditions in the waterbody to support a finding of impairment rather than insufficient data? (BETH)

Response: A stream will not be considered for listing unless it has been found to not support a designated use. This is not based on a single data point. Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". If a waterbody is found not to meet its' designated uses, then a determination is made as to whether or not it should be placed on Indiana's 303(d) list of impaired waters.

Comment: The table intended to provide the criteria for use support assessment suffers from a great deal of vagueness. In particular, the explanations of the assessment processes for toxicants and nutrients lack any objectivity. (IWQC)

Response: Use Support/Impairment status was determined for each stream waterbody using the assessment guidelines provided by USEPA (*Guidelines for Preparation of the State Water Quality Assessments (305[b] Reports and Electronic Updates: Report Contents.*

Washington, DC: U. S. Environmental Protection Agency. (*EPA-841-B-97-002A*.)). Available results from six monitoring result types were integrated to provide an assessment for each stream waterbody.

- Physical/chemical water results.
- Fish community assessment.
- Benthic aquatic macroinvertebrate community assessments.
- Fish tissue and surficial aquatic sediment contaminant results.
- Habitat evaluation.
- *E. coli* monitoring results.

To properly determine if a waterbody was meeting Indiana's water quality standards, a team of professionals within IDEM was assembled to evaluate the data that was available for different waterbodies throughout the state. The team included staff from: Indiana's TMDL program, the Environmental Toxicology and Chemistry Section, Biological Studies Section, the Water Quality Surveys Section, and the Water Quality Standards Section. Staff from other areas within IDEM was included in the discussion where appropriate. Understanding that each situation is unique, this team of specialists evaluated all the available data to make the decision considered most appropriate and accurate.

Comment: The draft 2002 303(d) list is vague in its identification of waterbodies because IDEM has changed the naming convention for waterbodies from the previous 303(d) lists without providing any way for the public to reasonably trace these changes. It is always difficult and, in many cases, essentially impossible to tell what waterbody IDEM is proposing to list as impaired because the same waterbody has been listed in slightly varying forms more than a half dozen times scattered across the detailed, twenty page 303(d) list. (BETH)

Response: The 1998 303(d) list was created without the use of a Geographic Information System to exactly pinpoint were a waterbody segment would began and end. Waterbody segments were located spatially using geographic reference points such as Cities or roads. Any changes that were made for the 2002 listing more clearly delineate these stream segments using GIS and EPA's stream reach and hydrologic unit areas categorization scheme. The impact on the regulated community should not change. The TMDL process itself will determine pollutant source and will allocate loads accordingly. Streams listed for more than one parameter may be listed separately for each parameter, depending on how best to develop the TMDLs.

Comment: IDEM's listing methodology should reflect the draft recommendations of the TMDL Advisory Workgroup and provide sufficient information and detail to allow a person to determine how IDEM made any decisions to list waters as impaired. Among these requirements, the listing methodology should prescribe a practical and familiar assemblage of data and information sources that will be deemed appropriate and acceptable by the state for water quality assessment purposes. The more sources or types of data outside of the standard list submitted by a third party for consideration, the more qualifiers the methodology will need to describe about how that data will be used in the assessment process. (IWQC)

Response: The TMDL Advisory Workgroup's recommendations have been included in IDEMs listing methodology, and were used in making listing decisions.

For data from outside sources to be used for listing or delisting, it must meet IDEMs Quality Assurance/Quality Control requirements. For more information, see response to comment from "IWQC" below. Other data from professionals known by IDEM to have appropriate QA/QC could also be considered adequate for listing/de-listing decisions.

Comment: It is essential that the decision to list a waterbody as impaired be based on adequate data in terms of quality, quantity, age, type, and scientific defensibility because designating a water as impaired on the 303(d) list leads to the requirement to develop and implement a TMDL for that water which could likely result in more stringent discharge limits

and control requirements for dischargers and landowners surrounding the water body. To be used for 303(d) impairment decisions, chemical, physical, and biological data must adhere to defined quality assurance and quality control protocols that ensure that data are of known and appropriate quality; however, IDEM has not made its QAPP for impaired waterbody listing data readily available to the public. (IWQC, IFB, OCA)

Response: All data used for listing/delisting purposes is subject to stringent Quality Assurance/Quality Control measures. Information regarding IDEMs Quality Assurance Project Plan (QAPP) is available upon request. (For more information, see response to comment from IWQC below.)

Comment: It is critical that IDEM be able to quickly and adequately ascertain the quality of different sources of data submitted in support of a 305(b) assessment or a 303(d) listing. This is important because IDEM has limited resources to handle data from third parties and must, therefore, establish data quality protocols to allow data from different sources to be comparable when assessed. (IWQC)

Response: It is IDEM's goal to use representative data and information in making CWA Section 305(b) water quality assessment decisions and 303(d) listing/delisting decisions. IDEM's Office of Water Quality (OWQ) has a QAPP and classifies data into four Data Quality Assessment (DQA) levels (1 through 4). Briefly, DQA level 1 (screening data) results have no QC information. DQA level 2 (field analysis data) results have limited QC information. DQA level 3 results (laboratory analytical data) have all QC check results provided by a contract analytical laboratory. DQA level 4 (enforcement data) is a full USEPA QC data package, and is reported on CLP Forms. With QA/QC checks, DQA levels 2, 3, and 4 are considered complete and are used for OWQ regulatory decisions.

For data from outside sources, especially for 303(d) listing purposes, IDEM staff would have to examine the field analysis or laboratory analytical data to insure it is roughly equivalent to the data we generate under our QAPP prior to use by IDEM. This would be a QA/QC data translation with a DQA Level 2 or 3 as a reasonable goal. Other data from professionals known by IDEM to have appropriate QA/QC could also be considered adequate for listing/de-listing decisions.

Comment: State water quality monitoring and assessment programs should establish QAPPs and refine data quality objectives to improve the process of collecting quality data and information for regulatory and planning decisions. This process includes informing third parties interested in submitting data for water quality assessment purposes about the importance of documenting that the data were collected in accordance with approved quality assurance and quality control measures. In accordance with current EPA guidance, IDEM should specify the essential components to be included in each QAPP. The State of Texas has developed a quality assurance program that could serve as a model for Indiana. (IWQC)

Response: IDEM has a comprehensive QAPP for TMDL and other water quality monitoring projects with clearly specified data quality objectives (DQOs) for each project. Each TMDL project is further supported with a Sampling and Analysis Work Plan with project specific DQOs. This information is available, and is used as reference anytime we solicit testing from a party outside of IDEM or consider third party data. External data solicitation also included recommendations from the TMDL Advisory Group on obtaining useful quality control/quality assurance information.

Comment: The listing methodology should establish a hierarchy scheme for the weighting of acceptable sources and types of data for use in the assessment process. Actual monitored water quality data (chemical, physical, or biological) collected under a state approved QAPP should be given the greatest weight and should serve as the primary basis for determining impairments. The 303(d) list of impaired waters should be based on actual data that can be quantified and qualified

and not on estimated, hypothesized, or projected data or modeling. While the EPA's 2002 Listing Guidance encourages the states to use probabilistic monitoring designs to obtain statistical representations of water quality to assist in determining monitoring priorities, it does not suggest that the states should use probabilistic data to determine that a specific waterbody is impaired. An impairment decision is only valid when based on monitored data that meets the data quality and quantity requirements of a state's methodology. (IWQC)

Response: It is IDEM's goal to make CWA Section 305(b) water quality assessments based on data and information representative of water quality. Results of probabilistic design sampling are used over a large area such as the Great Lakes basin or the East Fork White River basin only to statistically determine designated use support. The result of this statistical determination is expressed as percent or stream miles fully supporting aquatic life use and percent of stream miles not fully supporting aquatic life use for the large basin. Individual waterbody segments are normally classified for use support based on monitoring results from that specific water body. Therefore, 303(d) listings will be based on actual data, not estimated, hypothesized, or projected data.

Comment: The listing methodology should explicitly define a period of record for the data and information that will be assessed and the rationale for that period. Standards attainment decisions generally should be based on the most recent five (5) years of data. Older data should only be used if it can be justified as being consistent with current conditions of a particular waterbody. For example, Arizona has established conditions for use of older data. Data older than five (5) years may be used on a case-by-case basis if conditions in the waterbody have not changed, or if the older data are used in conjunction with newer data to demonstrate water quality trends, where appropriate analytical methods were used and the results can easily be compared with more recent data. If data older than five (5) years are used in an assessment, IDEM should explain why the older data continue to reflect current water quality conditions. (IWQC)

Response: It is IDEM's goal to make CWA Section 305(b) water quality assessments based on data and information representative of water resource quality. Use support decisions are generally based on the most recent five (5) years of data. Older data may be used if no major changes have occurred in the watershed, and the data is still considered to be representative of present water quality. Fish consumption advisories are based on some older fish tissue results. Further information may be found in "Indiana Water Quality Report 2000" on the IDEM Office of Water Quality Web Site at: http://www.in.gov/idem/water/planbr/wqs/quality/IN305b00.pdf . See page 93, Appendix D.

Comment: The listing methodology should establish minimum temporal requirements for a data set to be considered sufficiently representative. Temporal criteria should be refined to ensure that data sets are representative of the different conditions throughout the state and should be defined in the methodology to include, but not limited to, the following: (1) A two-year minimum data set is recommended to account for inter-year variation, and the sample set should be distributed over a minimum of two seasons to account for inter-seasonal variation; (2) No more than two-thirds of the samples should be collected in any one year; (3) A certain limit on the percentage of the data set that consists of high flow events during the course of the five-year period of record should be established in order to avoid bias from storm water events; and (4) Samples collected less than four days apart at the same riverine location should be considered one sample event. Samples collected less than seven days apart at the same lake, reservoir, or estuary location should be considered one sample event. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html. See Supplement volume 2, section3 "Making Use Support Determinations Use support decisions are

generally based on the most recent five (5) years of data. Further information may be found in "Indiana Water Quality Report 2000" on the IDEM Office of Water Quality Web Site at: http://www.in.gov/idem/water/planbr/wqs/quality/IN305b00.pdf. See page 93, Appendix D. Further explanation will be submitted with the 2002 303(d) list to EPA.

Comment: The listing methodology should establish minimum spatial requirements by waterbody type for all data sets assessed. Assessment methods should be developed to more accurately specify the geographical extent of impairment and water quality concern. Different spatial criteria can be established for different types of pollutants. The states of Florida, Nebraska, Texas, and Arizona have established useful spatial criteria. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". Most use support determinations are made for the waterbody segment(s) upstream of a sampling location with consideration for hydrology and land use. Also, IDEMs Assessment and Listing Methodology Document will be submitted to EPA, along with the 2002 303(d) list.

Comment: Data requirements that need to be considered for inclusion in the listing methodology or state water quality standards concern samples collected below low flow criteria, elimination of bias from low flow measurements, and the need to know a waterbody's specific pH or hardness when assessing toxic pollutant criteria. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". It is IDEM's goal to make use support and listing decisions based on representative data and information. Use support decisions are based on Indiana's water quality standards.

Comment: The listing methodology should explicitly define the minimum number of samples that will be required to make listing determinations. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". It is IDEM's goal to make use support and listing decisions based on representative data and information. IDEMs Assessment and Listing Methodology Document will be submitted to EPA, along with the 2002 303(d) list.

Comment: The listing methodology needs to establish a mechanism for determining errors in the use of water quality exceedances. In determining whether a water quality standard is being met, many states have traditionally compared the rate of criteria exceedance to a "partial support" threshold of ten (10) percent or a "non-support" threshold of twenty-five (25) percent. This approach, including the ten (10) percent and twenty-five (25) percent thresholds, was originally suggested by EPA in Section 305(b) report guidance, and Indiana's draft listing methodology states that EPA's Section 305(b) report guidelines were applied to sample results. Two types of possible errors are identified as weaknesses of the traditional method: (1) Type I errors occur when a determination is made that a water body is impaired though it is actually meeting all water quality standards; this type error with small data sets can be quite high—over fifty (50) percent in some cases; and (2) The converse determination that a water body is meeting all water quality standards when it is actually impaired is called a Type II error. Both Type I and Type II errors can have significant implications for a state's water quality management planning process and must, therefore, be recognized and controlled. By convention, decision makers

establish an acceptable Type I error rate and control Type II errors by increasing the required sample size. Determination of an acceptable error rate is a management decision. Lowering the error rate for one type, however, can have the effect of inflating the error rate for the other type. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section3 "Making Use Support Determinations". It is IDEM's goal to make use support and listing decisions based on representative data and information. How representative the data are can be independent of number of samples. The question is not error type, but whether or not the data are representative of conditions in the waterbody.

Comment: 303(d) listing decisions should not be based on probabilistic data (estimates based on statistical manipulations) or evaluated data (data concerning land use, location of sources, and questionnaire surveys). Probabilistic and evaluated data may be helpful in making decisions about where to target monitoring efforts; however, only measured data that meet the quality and quantity requirements of the listing methodology should be used to make listing decisions that lead to the requirement to develop TMDLs. Predictive tools using data such as land use projections, buildout scenarios, slope factors, and other statistical probability calculations do offer valid tools that can be used for planning purposes, but such tools should not be used for regulatory management purposes.(IWQC)

Response: Waterbodies are only included on Indiana's 303(d) list if actual data exists that shows there is an impairment. It is IDEM's goal to make CWA Section 305(b) water quality assessments based on data and information representative of the quality of the water resource. Results of probabilistic design sampling from a large area such as the Great Lakes basin or the East Fork White River basin are used as a data set only to statistically determine designated use support. The result of this statistical determination is expressed as percent stream miles fully supporting aquatic life use and percent stream miles not fully supporting aquatic life use for the large basin. Individual waterbody segments are normally assessed for use support using all available monitoring results (both probabilistic and targeted) from that specific water body.

Comment: A weight-of-evidence approach should be used when evaluating several types of data including chemical, biological, and physical data. This approach considers the amount of each type of data, the quality of each set of data (including the data collection and analysis methods), the variability of each set of data, and the strength of the linkage of each set of data to protection of the water quality standards. For example, suppose an acceptable amount of available dissolved oxygen data for a certain water body indicates slight exceedances of the water quality criterion; yet, a sufficient set of biological data for that waterbody indicates that a healthy fish and macroinvertebrate community exists. Under the weight-of-evidence approach, the biological data should be weighted more heavily, and the waterbody should not be listed on the 303(d) list. Using the weight-of-evidence approach would not preclude IDEM from using only one data type for making a listing decision with a data set of adequate size and quality. For example, suppose that water quality data for a particular metal exceed in-stream criteria by a factor of ten (10). In this case, the chemical data could be given a weight of one hundred (100) percent, and IDEM could decide to include the waterbody on the 303(d) list based solely on the chemical data. Several states have proposed or adopted a weight-of-evidence approach including Arizona, North Carolina, and Montana. (IWQC)

Response: **"**Weight of evidence" in this context usually means that more than one media must show non-attainment before the waterbody is classified as impaired. "Independent applicability" means that if any media (water chemistry or biota) is classified as not attaining a designated use, then the water body is classified as not attaining that designated use. IDEM uses

independent applicability to determine use support. The metal exceedance example in the comment above is one of independent applicability. The difficulty comes when one data set, like predictive water chemistry, indicates impairment and the responsive biological results indicate full support. Using independent applicability IDEM would classify the waterbody as not attaining designated use for Section 305(b) reporting because the predictive chemical water quality standard(s) are exceeded. Biological indicators may not have responded to stressors in the water body and may not have responded yet to the cause. On the other hand, biological results provide an integrated response to long-term or chronic pollutant sources that may not be predicted by short-term or grab sample chemical monitoring.

Comment: The listing methodology should establish clear procedures for removing waters from the 303(d) list. Specifically, the methodology should address listing and delisting between listing cycles and reassessment of currently listed waters that no longer meet the data quality and quantity requirements. A procedure needs to be established that can allow adding and deleting waters from the 303(d) and for the following: (1) Submission of third party data; (2) Public comment on proposed listing changes; (3) Moving a waterbody or pollutant from Category 5 of the 303(d) list to another category in the integrated water quality report; and (4) Decreasing and expanding the spatial scope of an existing impairment on the 303(d) list. The listing methodology should explain how the procedure meets the "good cause" delisting requirement contained in the current federal rules at 40 CFR 130.7(b)(6)(iv) or other rationales for removing waters from the 303(d) list. (IWQC, IFB)

Response: In general IDEM will only consider delisting a waterbody if one of the following is true:

1) New data indicates that water quality standards are now being met for the waterbody under consideration. Third party data is acceptable if it meets IDEMs Quality Assurance/Quality Control requirements
2) The listing methodology has changed, and the waterbody under consideration would not be considered impaired under the new methodology
3) A change has been made to the states water quality standards which would indicate that a listed waterbody was now considered supporting of designated uses
4) An error is discovered in either the sampling, testing, or reporting of data that led to an inappropriate listing
5) If it is determined that another program, besides the TMDL program, is better suited to address the water quality problem, or the problem is determined not to be caused by a pollutant.
6) A TMDL has been completed, and the waterbody is expected to meet water quality standards after implementation of the TMDL.

Comment: After a new listing methodology has been developed, IDEM should reevaluate any waterbodies listed before the adoption of the new methodology and allow waters to be delisted if the supporting data do not meet the current data quality and quantity requirements. Waters that were listed based on data insufficient to meet the new data quality and quantity requirements should be removed from the 303(d) portion of the list (Category 5 of the integrated water quality report) and placed in one of the 305(b) portions (Category 2 or 3) instead. Such reevaluation should be publicized to stakeholders and should clearly specify the state's rationale for its approach. (IWQC, IFB)

Response: All waterbodies including the ones from the 1998 303(d) list will comply with the listing methodology.

Comment: IDEM should be extremely conservative in its decisions to delist a waterbody and should be more forthcoming in promulgating the data that support a decision to delist. IDEM should have at least four year' worth of year round data without any exceedances of a parameter

to justify delisting the water for that parameter. (GCTF)

Response: Decisions are made on the best data available. If the data isn't complete enough to make an appropriate decision on delisting, then the stream will remain on the list. Reasons for delisting are as follows:

1) New data indicates that water quality standards are now being met for the waterbody under consideration. Third party data is acceptable if it meets IDEMs Quality Assurance/Quality Control requirements
2) The listing methodology has changed, and the waterbody under consideration would not be considered impaired under the new methodology
3) A change has been made to the states water quality standards which would indicate that a listed waterbody was now considered supporting of designated uses
4) An error is discovered in either the sampling, testing, or reporting of data that led to an inappropriate listing
5) If it is determined that another program, besides the TMDL program, is better suited to address the water quality problem, or the problem is determined not to be caused by a pollutant.
6) A TMDL has been completed, and the waterbody is expected to meet water quality standards after implementation of the TMDL.

Comment: IDEM should provide additional information concerning how its intended integrated water quality report (integrating the 305(b) water quality report and 303(d) list of impaired waters consistent with EPA's 2002 listing guidance recommended structure) will be organized and should describe the different purposes of the various categories. The descriptions should be as specific as possible regarding how types of pollutants impact designated uses. IDEM should also explicitly describe the spatial extent of the water quality concern or impairment particularly for waters in Categories 4 and 5 of the integrated water quality report. Finally, IDEM should clearly set forth its rationale for placing water bodies in the five categories. (IWQC)

Response: IDEM uses the 305(b) water quality assessment database as the basis for 303(d) listing. IDEM will follow EPA's 2002 consolidated listing methodology for the 303(d) list. Under this methodology, a waterbody assessed for water quality will be placed in one of five categories depending on the designated use that it supports.

The waterbodies spatial extent is noted using EPAs National Hydrography Database.

A brief rationale for the 5 categories was published in the March Indiana Register. A more detailed description of water quality assessment for both the 305(b) report and 303(d) list and the rational for the five category listing is now provided in the 303(d) listing methodology document that will be submitted to EPA along with the 303(d) list.

303(d) Listings Based on Fish Consumption Advisories

Comment: IDEM's decision with the draft 303(d) list in 2002 to list only waters with site specific fish consumption advisories (rather than the 1998 approach of listing all waters with a general advisory from the state department of health) is supported by EPA's recent guidance on the use of fish consumption advisories and by the IWQC; nevertheless, concerns still exist with the validity and basis of the remaining fish consumption advisory listings. Fish consumption advisory listings based on based on narrative quality standards rather than on numeric water quality criteria are subjective assessments and, therefore, legally problematic. At the urging of EPA, Indiana has adopted narrative criteria in lieu of or to supplement numeric criteria. The analysis and determination of narrative criteria attainment is inherently less objective and consistent than that for numeric criteria. Thus, it is critical to provide a scientific basis for evaluating chemical, biological, or habitat data individually or in combination, in a quantitative,

objective manner, to determine whether a waterbody is impaired on these bases. EPA has recommended that the states "translate the applicable narrative criteria on a site-specific basis or through adoption of site-specific numeric criteria". A number of administrative and judicial decisions, for example, the *Monongahela Power* case and the *City of Los Angeles* case, have concluded that narrative criteria should not be applied to any water in the absence of a duly promulgated numerical translator. Such decisions have held that narrative criteria cannot serve as a basis for listing if an objective translation method has not been established using appropriate rulemaking procedures. Because the complications surrounding this issue correlate directly to the definitions and implementation procedures that exist in the adopted water quality standards, Indiana should deal with narrative criteria through its Triennial Review rulemaking for water quality standards revision. Prior to the development of numeric translators through the Indiana Triennial Review standards revision process, the listing methodology should explicitly describe how data related to narrative criteria would be used to identify water quality concerns. (IWQC, IEUWWG)

Response: Fish consumption advisories are not based on narrative water quality standards, but are instead based on a risk calculation derived from a numeric threshold for the presence of certain substances in fish tissue. They are not "subjective assessments". In any event, the West Virginia Supreme Court recently reversed and remanded the Monongahela Power lower court decision, and EPA's TMDL rules clearly provide that narrative criteria are among the water quality standards to be considered for purposes of listing.

Comment: IDEM has compounded the conservative fish consumption advisory assumptions of the ISDH by listing as impaired all waters other than waters meeting ISDH's "unrestricted consumption" advisory. This has been done despite a study (An Evaluation of Fish Consumption By Indiana Recreational Anglers: An On-Site Survey, Technical Report 99-D-HDFW-2, Purdue University Department of Forestry & Natural Resources (Jun. 30, 2000)) conducted of actual fish consumption rates of Indiana recreation anglers that determined that, of active consumers (i.e., those who ate the fish they caught within three months prior to the survey), the actual consumption rate was between one and two ounces over the same period rather than the eight ounces of fish for two hundred twenty-five (225) meals per year upon which the ISDH based its advisories. Averaged over the general population of the state, the consumption rate is significantly lower. Because of the many legal, scientific, and technical issues that can arise from the use of fish advisories to make impairment decisions, IDEM should use the rulemaking process to adopt appropriate water quality standards to protect human health from the consumption of fish. Standards, rather than any advisories, should be used in evaluating waters for fish consumption uses. (IWQC, IEUWWG)

Response: Clean Water Act (CWA) Section 101(a)(2), establishes a national goal for water quality that is "fishable and swimmable" and is considered as one of several designated uses for the surface water for protection of human health, aquatic life and wildlife. The designated use "fishable and swimmable" that is solely intended for protection of human health is attained by a water quality criterion for one or more pesticides and bioaccumalative toxic pollutants and not by a narrative water quality criterion. Many of these chemicals could be present in the water column at or below the detection level and may not appear to be violating the water quality standard for any of these chemicals or pose no threat to human health. However, many of these chemicals, because of their tendency to bioconcentrate, bio-accumulate in fish tissue from the water column through the aquatic food chain. Consumption of such contaminated fish by humans, wherein one or more pesticides and bioaccumulative toxic pollutants may be present in fish tissue in detectable concentrations above certain levels for non-cancer or cancer effects, is considered as unsafe for human health and constitutes the basis for fish consumption advisories, and justifies their inclusion on the 303(d) list.

Comment: The group 2 advisory against eating no more than one fish meal per week should not constitute a water impairment. Pennsylvania and Kentucky have not included this advisory category in their 303(d) lists, and Indiana should not either. (IEUWWG)

Response: For Fish Consumption Advisory (FCA), that is based on risk analysis for protection of human health, Indiana/ISDH sets its FCA based on a standard eight ounce (227 grams) meal for a 150 pound (70 kg) adult. Using this standard, Group 1 FCA is defined as 225 meals per year, and under this group Indiana allows unlimited consumption of fish wherein pollutant concentrations in fish tissue are considered to be at or below certain level of non-cancer or cancer risk to humans. But at all other FCAs categories (Group 2 through Group 5), because of some partial to greater non-cancer or cancer risk associated with one or more contaminant concentration that may be present in fish tissue, [FCAs have one or more kinds of fish meal limitations such as once a week (Group 2), once a month (Group 3), 6 meals per year (Group 4) or eat no fish (Group 5)], are included on the Indiana 303(d) list of impaired waterbodies to better serve and protect human health from adverse effects of toxic pollutants.

Impaired Biotic Community and Habitat Listings

Comment: EPA identifies hydromodification as the cause for about twenty percent of the nation's impaired waters. Streams listed for impaired biotic communities many times have been altered with the result being increased sedimentation and thermal load. IDEM needs to consider the impact of drainage activities such as hydromodification on water quality. (SDC)

Response: IDEM does take into account hydromodification when completing water quality assessments. As part of IDEMs biological studies program, a QHEI (Qualified Habitat Evaluation Index) is completed to determine if habitat is what is causing the problem. If habitat is the sole problem affecting the biological community, then under IDEMs new methodology, the stream will not be included on the 303(d) list, and thus will not be addressed by the TMDL program.

Comment: IDEM has not provided enough information for stakeholders to evaluate the basis of the over one hundred eighty (180) waterbodies and three habitat listings that are listed due to having impaired biotic communities. There is no information in the draft listing methodology except ranges of indices of biotic integrity and habitat evaluation. The draft methodology does not explain how the ranges or indices were developed, what they mean, or how they are appropriate to protecting designated uses. Without this information, the ability to provide specific comment is limited; nonetheless, IDEM should not list a water unless it finds that a designated use is not being met because an objective, legally adopted criterion associated with that use has been exceeded. Thus, a waterbody should be listed based on biological or habitat information only if there is a violation of a promulgated water quality standard that relates to a pollutant-caused biological or habitat impairment. Where no such objective standard or criterion has been established, listing based on an impaired biotic community or habitat is inappropriate. (IWQC, IEUWWG)

Response: By definition, for a waterbody to be considered impaired, it must not be meeting a designated use(s). These impairments are based on the Water quality Standards promulgated by Indiana that relates to a pollutant. Listings of impaired biotic communities are based on the narrative standard for aquatic life. IDEM does not list streams where the impairment is solely due to habitat issues, or where the impairment is caused by pollution rather that a pollutant. IDEMs Assessment and Listing Methodology Document will be submitted to EPA, along with the 2002 303(d) list. For more information, see response to comments from OCA below.

Comment: The agricultural community has the understanding that biological data cannot

be used in conjunction with a designation of impaired biotic community unless the WPCB adopts standards. No standards have been provided by the WPCB; therefore, a designation of impaired biotic community does not follow state policy. (OCA)

Response: Although the WPCB has not adopted numeric biological criteria per se, the WPCB has adopted several rules that relate to protection of the biotic community. For example, all waters of the state are designated to provide for a well-balanced, aquatic community except those specifically exempted by rule (see rules 327 IAC 2-1-3(a)(2); 327 IAC 2-1.5-5(a)(2); 327IAC 2-1-6(c)). Additionally, many of the narrative standards are designed to protect the aquatic community, and one of the goals of the state is to restore and maintain the biological integrity of the state's waters. Designated uses and narrative standards are water quality standards; therefore, the listing of waters with impaired biotic communities is in accordance with state law. Additionally, EPA's regulation at 40 CFR 130.7 states that narrative standards and uses are to be considered for purposes of listing.

Comment: Indiana's biological measurements and comparison of those measurements to "reference sites" or "reference conditions" do not yet have sufficient scientific basis for use by themselves as the basis for 303(d) listing decisions. The EPA studies (A Review of Index of Biotic Integrity Metric Development Documents for Two Areas in Indiana: Central Corn Belt Plan and The White River Drainage (July 1995) and Review of Development of Index of Biotic Integrity Expectations in the Wabash River (Feb. 1999), both by EA Engineering, Science and Technology) to assess the biological quality of various Indiana waters have been reviewed by experts in the field who have concluded that the studies are technically invalid and cannot be used as the basis for stream use designations. Reviews of field data and discussions with sampling crews have found (1) numerous data errors in the reports; (2) a lack of repeatable, peer-reviewed sampling methodologies; and (3) inadequate, cursory field sampling techniques. As a result, the conclusions of these studies are highly suspect, and the raw data is not usable for biological assessment purposes. (IWQC, IEUWWG)

Response: The referred documents were the products of biological measurements from hundreds of sites across Indiana and in all different kinds and sizes of streams. They provide us with a tool for understanding "what is expected" and what would be an unreasonable deviation from that expectation (ie. an impaired biotic community).

In response to questions raised regarding the technical validity of one of these documents (Wabash River) and adequacy of the original peer review, the U.S. EPA conducted a formal peer review in 2000. This peer review indicated that some corrections and clarification of the report would be useful. The authors and EPA developed a clarifying statement to the report that addressed the peer review comments and included an errata for the report. After this process was completed the U.S. EPA concluded that the data and conclusions drawn in the original report were "substantially accurate." EPA continues to support these reports. The primary goal of these studies was to develop biological expectations for Indiana rivers and streams based on fish communities. Since publication of these reports, additional literature has been published that addresses a variety of issues concerning bio-criteria development. EPA considers these reports to be valuable products that have furthered the goals of biological assessment and criteria development for Indiana rivers and streams.

Comment: The EPA studies concerning the Index of Biotic Integrity (IBI) scores contained catch number inconsistencies, poor spatial and temporal coverage, and inadequate data to allow accurate determinations of water quality classifications and, thus, could not possibly indicate with any degree of accuracy the location of impacts or the overall health of rivers. Even if the IBI scores from the EPA studies were taken at face value they could not consistently support a classification for waters such as the White or Wabash Rivers as having impaired biotic communities. Many of the EPA IBI scores from the West Fork of he White River are equal to or

higher than scores from the unclassified East Fork of the White River. (IEUWWG)

Response: The IBI calibrations developed for rivers and streams assessment in the ecoregions of Indiana are the best and most applicable tools available for determining the fish community biotic health of Indiana streams. There have been no other studies at this level of effort to develop a better or more refined calibration of expectation by which to aid staff in determining a biotic community impairment based on the sentinel fish community. The referred documents were the products of biological measurements from hundreds of sites across Indiana and in all different kinds and sizes of stream. They provide us with a tool for understanding "what is expected" and what would be an unreasonable deviation from that expectation (ie. an impaired biotic community).

In response to questions raised regarding the technical validity of one of these documents (Wabash River) and adequacy of the original peer review, the U.S. EPA conducted a formal peer review in 2000. This peer review indicated that some corrections and clarification of the report would be useful. The authors and EPA developed a clarifying statement to the report that addressed the peer review comments and included an errata for the report. After this process was completed the U.S. EPA concluded that the data and conclusions drawn in the original report were "substantially accurate." EPA continues to support these reports. The primary goal of these studies was to develop biological expectations for Indiana rivers and streams based on fish communities. Since publication of these reports, additional literature has been published that addresses a variety of issues concerning bio-criteria development. EPA considers these reports to be valuable products that have furthered the goals of biological assessment and criteria development for Indiana rivers and streams.

Comment: Biological indices have not been demonstrated to be a sufficiently accurate characterization of the biological health of a waterbody. The use of a "pristine" water body as the reference for such assessments significantly detracts from their accuracy. To address these problems, IDEM would need to clarify that it would not be comparing dissimilar sites. For example, sites that have been urbanized for a hundred years should not be compared to sites in the middle of state parks or national wilderness areas. (IWQC)

Response: Biological measurements have long been identified and used by scientists, citizens, and assessment agencies alike as quality indicators of the health of some waterbody types. EPA has long encouraged the development of biological indicators for waterbody types where they do not currently exist nor are in use. Of the state's surrounding Indiana, Illinois is known to base many of their waterbody impairments on biological data, regardless of chemical results.

In addition "reference sites", when used, are typically taken as "least impacted" for the area/region in question. IDEM takes it for granted that "pristine" sites no longer exist, and that it is not reasonable to assume that the Indiana landscape and resources will return to pre-settlement conditions.

Comment: Biological data should only be used if the state has adopted biological water quality standards that must be either numeric in nature or in narrative form with a specific translator mechanism. Indiana has not adopted requirements for conducting valid biological assessments, and IDEM should be very careful when using biological data for any purposes. Using this data for listing purposes is very subjective and scientifically unjustified. Therefore, IDEM should not use biological data in making attainment decisions until the state has adopted sound procedures that specify data reliability and sufficiency criteria for biological assessments. (IWQC)

Response: IDEM has indeed developed and currently utilizes scientifically defensible methods for assessing the status of aquatic biological communities, based on the renowned efforts of Dr. Jim Karr and others. From these methods, indices have been developed which

utilize a statistically valid system of assigning numeric values to the data, thus weeding out professional and individual biases in the data. Utilization of a random/probabilistic sampling design when monitoring state waters likewise reduces subjectivity. In IDEM's "Guide to Appropriate Metric Selection for Calculating the Index of Biotic Integrity (IBI) for Indiana Rivers and Streams" prepared by Dufour Consulting the following statement was made and the following references were used to develop our methods for assessing aquatic communities.

"Sample collections for all ecoregions, and large and great rivers were conducted by Dr. Thomas P. Simon (formerly with U.S. EPA) with support from the Indiana Department of Environmental Management (IDEM) for the development of biological criteria on behalf of the U.S. EPA, Region 5. Collection procedures [followed] the U. S. Environmental Protection Agency (USEPA) Standard Operating Procedures for conducting rapid assessment of ambient surface water quality using fish (1988). For a detailed list of documents used to create this guide, please refer to the reference section of this paper."

U.S. Environmental Protection Agency (USEPA). 1988. Standard Operating Procedures for conducting rapid assessment of ambient surface water quality using fish. USEPA. Region V. Central Regional Laboratory. Chicago, IL.

Simon TP. 1991. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. I. Central Corn Belt Plain. U.S. Environmental Protection Agency, Region V, Chicago, IL. EPA 905/9-91/025.

Simon TP. 1992. Biological Criteria Development for Large Rivers with an Emphasis on an Assessment of the White River Drainage, Indiana. U.S. Environmental Protection Agency, Region v, Chicago, IL. EPA 905/R-92/006.

Simon TP. 1994. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. II. Huron-Erie Lake Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-92/007.

Simon TP. 1997. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. III. Northern Indiana Till Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/002.

Simon TP, RL Dufour. 1997. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. V. Eastern Corn Belt Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/003.

Simon TP, JR Stahl. 1998. Development of biotic integrity expectations for the Wabash River. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/005

Simon TP. Draft. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. IV. Interior River Lowland. U.S Fish and Wildlife Service, Bloomington, IN.

Comment: EPA issued a clarification of its 2002 Integrated Report Guidance, on the specific topic of using biological information as the basis for classifying waters, that gives a state the option of putting a biologically impaired water in some other category other than Category 5, a listing on the 303(d) list. The outcome of this clarification is that waters cannot be classified as impaired on the basis of biological information if the state cannot identify a pollutant as causing the problem. IDEM's use of the general classification of impaired biotic communities appears to be in conflict with EPA's guidance. (IEUWWG)

Response: USEPA's guidance clarification provides two options for using biological data and information in developing 2002 Section 303(d) lists. "When existing and readily available data and information (biological, chemical or physical) are sufficient to determine that a pollutant has caused, is suspected of causing, or is projected to cause the impairment, the AU (Assessment Unit) should be listed in Category 5. (When biological data and information indicates that the impairment is not caused by a pollutant, the AU may be placed in Category 4C.)" in Memorandum from R. H. Wayland to EPA Regional Water Management Directors, EPA Regional Science and Technology Directors, and State, Territory and Authorized Tribe Water Quality Program Directors: "Clarification of the use of Biological Data and Information in the 2002 Integrated Water Quality Monitoring and Assessment Report Guidance" dated March 26, 2002, available on the USEPA web site at: http://www.epa.gov/owow/tmdl/guidance/biochange20302.pdf . Biological sampling is not conducted in rivers or streams without the concurrent assessment of physical habitat conditions (via an objective and scientifically sound index, so as to reduce personal bias). This allows staff to weigh biological data against physical (and chemical, if available) data to determine if the probable cause of degradation is related to habitat degradation or a pollutant.

Comment: IDEM does not appear to have taken the preparatory step prescribed in the EPA 2002 Integrated Report Guidance to "establish how biological monitoring will be used to determine if biological impairment of an assessment unit (AU) exists, the cause of the impairment, and the appropriate listing category for the AU." IDEM needs to establish clear methodology for utilizing biological assessment data before using such data in 303(d) listing decisions. This prerequisite is important since it would provide clear criteria for the amount and quality of the bio-assessment data to be eligible for use in 303(d) listings and would define criteria for identifying the probable cause of a biological impairment. This can be critical because biotic impairment can be caused by a multitude of problems, including poor habitat, and is not necessarily pollutant related. (HE, CP)

Response: As with many of the state's water quality standards, IDEM has been utilizing and reporting on biological measures of impairment long before the National Hydrography Dataset (NHD) was available. The methodology for IDEM's biological assessments is well established and documented. The amount of data collected is more often a factor of available resources, which is taken into account when selecting a statistically valid sample set. . In IDEM's "Guide to Appropriate Metric Selection for Calculating the Index of Biotic Integrity (IBI) for Indiana Rivers and Streams" prepared by Dufour Consulting, the following statement was made and the following references were used to develop our methods for assessing aquatic communities.

"Sample collections for all ecoregions, and large and great rivers were conducted by Dr. Thomas P. Simon (formerly with U.S. EPA) with support from the Indiana Department of Environmental Management (IDEM) for the development of biological criteria on behalf of the U.S. EPA, Region 5. Collection procedures [followed] the U. S. Environmental Protection Agency (USEPA) Standard Operating Procedures for conducting rapid assessment of ambient surface water quality using fish (1988). For a detailed list of documents used to create this guide,

please refer to the reference section of this paper."

U.S. Environmental Protection Agency (USEPA). 1988. Standard Operating Procedures for conducting rapid assessment of ambient surface water quality using fish. USEPA. Region V. Central Regional Laboratory. Chicago, IL.

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Simon TP. 1994. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. II. Huron-Erie Lake Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-92/007.

Simon TP. 1997. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. III. Northern Indiana Till Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/002.

Simon TP, RL Dufour. 1997. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. V. Eastern Corn Belt Plain. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/003.

Simon TP, JR Stahl. 1998. Development of biotic integrity expectations for the Wabash River. U.S. Environmental Protection Agency, Region V, Water Division, Watershed and Non-Point Source Branch. Chicago, IL. EPA 905/R-96/005

Simon TP. Draft. Development of Index of Biotic Integrity expectations for the Ecoregions of Indiana. IV. Interior River Lowland. U.S Fish and Wildlife Service, Bloomington, IN.

IDEMs Assessment and Listing Methodology Document will be submitted to EPA along with the 2002 303(d) list.

Comment: The three habitats listed as impaired waters fall into the category of having biological impairment that is not caused by a pollutant or pollutants, but some other factor, such as habitat modification, and should, therefore, be included in Category 4C of the integrated water quality report (waters where impairment is not caused by a pollutant) not on the 303(d) list. Each of these waters is also listed as having impaired biotic communities, and it appears as though the listings are related to habitat rather than an identifiable pollutant. A corrected listing in Category 4C of the integrated water quality report would comply with EPA's 2002 listing guidance document where EPA explains that biological impairments should be linked to a specific pollutant or pollutants in order to be included on the 303(d) list. (IWQC)

Response: For these particular listings, habitat was determined to be a contributing factor,

but not the main reason for the impairment. To avoid confusion, "Habitat" will be removed from the "Parameter(s) of Concern" column on the 2002 303(d) list. Streams where habitat is the sole reason for the impairment will be placed in Category 4C of the integrated list. USEPA's "Clarification of the use of Biological Data and Information in the 2002 Integrated Water Quality Monitoring and Assessment Report Guidance" dated March 26, 2002, is available on the USEPA web site at: http://www.epa.gov/owow/tmdl/guidance/biochange20302.pdf

Nutrient, Organic Enrichment, and Organics Listings

Comment: The draft 303(d) listing in its description of the eighteen (18) nutrient, five (5) organic enrichment, and five (5) organics listings that it contains is even more vague than it was with the impaired biotic community and habitat listings. There is no mention in the draft listing methodology of the organic enrichment and organics listings. A water body should be listed only if there is a violation of a promulgated water quality standard that relates to a nutrient or organics. Where no such objective standard or criterion has been established, listing is inappropriate. (IWQC)

Response: "Organic enrichment" is used mostly when a biological response indicates organic enrichment (possibly sewage). This parameter is usually associated with aquatic life designated use.

Nutrients are included in the methodology.

PAHs can be a subset of priority organics. The water quality standard for PAHs, both inside and outside the Great Lakes Basin, is for total PAHs (327 IAC 2-1-6, 327 IAC 2-1-5.8). PAHs are analyzed not as a group, but as individual compounds. However, the quantities of PAHs found in various matrices, based on the water quality standards for total PAHs, are always expressed as one number.

Comment: IDEM should identify whether one or both of nitrogen or phosphorus is the limiting nutrient for any waters considered impaired by nutrients and specify the limiting nutrient in the 303(d) list. Evaluation of narrative criteria for determining use impairment in impacted waters should be made appropriate to the particular region. Reference conditions should not be defined based on pristine conditions or on conditions that may have existed before human settlement because human activities have altered the majority of landscapes and aquatic ecosystems in many regions, and such reference sites often are not characteristic of pristine conditions. Comparisons of a waterbody to conditions in a reference waterbody must be made under similar conditions of season and hydrology. Suitable reference sites do not always exist for conducting valid comparative assessments; therefore, the state must develop technical assessment guidance as part of its water quality monitoring and standards development programs. (IWQC)

Response: CWA Section 305(b) water quality assessments were based on the presence of low dissolved oxygen, high pH, excessive nuisance algae, and field observations that indicated the narrative and/or numerical water quality standards were not being attained. High concentration of inorganic nutrient parameters (phosphorus or nitrate) and/or biological response indicating organic enrichment (possibly sewage) combined with possible nutrient source(s) indicated that nutrients are driving the process.

Comment: IDEM has provided no explanation of the distinction between the listings for nutrients, organic enrichment, and organics. These listings would appear to be similar or related in some way, but it is entirely unclear. The draft listing methodology only mentions nutrients and not organic enrichment or organics. IDEM must explain the distinction with particular reference to protection of designated uses. (IWQC)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be

found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Table 1-2 in Supplement volume 2, section 1 "Water Quality Assessments under Section 305(b)". "Nutrients" includes phosphorus and/or nitrogen. "Organic enrichment" is used mostly when a biological response indicates organic enrichment (possibly sewage). These parameters are usually associated with aquatic life designated use. Organics refers to priority organics. Most priority organics are from the 1992 through 1998 lists. Historically in the Lake Michigan Basin, priority organics were based on fish consumption advisories for pesticides such as DDT, Chlordane, and PCBs found in fish tissue, and also sediment information that indicated these substances were in high concentration. Fish consumption advisories are usually associated with the "fishable and swimmable" designated use that is mainly intended for protection of human health.

Metals and Pesticides Listings

Comment: A waterbody should not be listed for a class of pollutants such as metals or pesticides unless there are data showing an impairment for every individual pollutant in the class. If available data show exceedances of water quality standards for only some pollutants in the class, then the waterbody should be listed only for those specific pollutants. If IDEM cannot identify the specific pollutant or pollutants leading to the impairment, it should conduct additional monitoring to determine the cause before including the waterbody on the 303(d) list. (IWQC, IEUWWG, OCA)

Response: Prior to the 2002 303(d) list, many waterbodies that had fish consumption advisories (FCAs) for one or more pesticides and/or metals found as contaminants in fish tissue, were listed on the 303(d) list. "Pesticides" was a carry-over from the 1998 303(d) List of Impaired Waters. In most cases these were legacy pollutants such as Chlordane, Dieldrin, DDT, or Endrin in fish tissue. PCBs and Mercury now drive fish consumption advisories since this standard is more protective of human health. "Metals" was a default category from the database whenever one or more metals were indicated as the parameter of concern. The generic term "metals" will be eliminated from the "parameter(s) of concern" column to avoid confusion, and the specific metal will be listed.

Thermal Listings

Comment: IDEM needs to give more attention to the biology of our Indiana waters and methods to assess the biotic component with the end goal being the restoration of water quality and compliance with the Clean Water Act's requirement to "assure protection and propagation of a balanced indigenous population of shellfish, fish and wildlife." (SDC)

Response: IDEM continues to make strides in improving its monitoring programs. Included in this is a probabilistic sampling program with its main focus being on the macroinvertebrate and fish communities. More information can be found in IDEMs 2001 – 2005 Surface Water Quality Monitoring Strategy document located on the world wide web at the following address: http://www.IN.gov/idem/water/assessbr/swqms2001findoc.pdf

Comment: IDEM has provided no information regarding the basis of the draft 303(d) listings for the three (3) water bodies listed for thermal impairments. The draft listing methodology makes no mention of thermal impairments. EPA has interpreted the provision of the Clean Water Act to require the protection of a balanced indigenous population (BIP) of shellfish, fish, and wildlife to mean that the states must list waters using this BIP Standard if they are impaired by thermal discharges from point sources. Waters affected by natural thermal loadings should not be listed. The 1992 preamble to EPA's TMDL rules noted that the states are required to identify waters affected by thermal discharges only to the extent that controls are not

sufficient to protect and allow propagation of a balanced, indigenous population of shellfish, fish, and wildlife. In addition, the 1999 proposal and the 2000 final rule (now suspended) included some new definitions to conform the regulations to the statutory provisions and retained the BIP Standard as determinative for listing purposes. The 2000 preamble stated that CWA Section 303(d)(1)(B) establishes the BIP Standard as the test for listing waters affected by point source thermal discharges. Thermal TMDLs developed to address any temperature issues should not be designed to meet a particular temperature criterion but rather such TMDLs must be designed to meet the BIP Standard. The 303(d) listing methodology should specify that the BIP Standard will be used to make impairment determinations and to develop TMDLs for waterbodies affected by thermal point source discharges. It is not appropriate for IDEM to determine that a waterbody is impaired because of temperature water quality criteria exceedances unless it first determines that the water is not supporting a balanced indigenous population. Such a balanced population may well be supported at a higher temperature than the temperature criterion established in Indiana's water quality standards. (IWQC, IEUWWG)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs.

Comment: If a discharger has received a 316(a) variance, it has demonstrated that the receiving water supports a balanced indigenous population of shellfish, fish, and wildlife; therefore, such a waterbody should not be placed on the 303(d) list. (IEUWWG)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs.

Comment: IDEM needs to apply Section 303(d)(1)(B) of the Clean Water Act, concerning thermal discharges, to listings of impaired waters due to temperature. IDEM needs to require Section 316 demonstrations and not waivers to protect important resources. There are only a few salmonid streams left in Indiana, and each fraction of a degree can mean the difference between life and death for sensitive species such as native brook trout. IDEM has a duty to protect these rare and sensitive waters. (SDC)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs. The IDEM NPDES permit program is currently developing a sampling protocal for section 316 demonstrations.

Comments Specific to Listings of Impaired Waters–Turtle Creek Reservoir

Comment: If a discharger can demonstrate that any limits for heat included in its NPDES permit are more stringent than necessary to meet the BIP standard under Section 316(a) of the

Clean Water Act, the discharger may receive a new limit. However, it appears that IDEM has included waterbodies subject to Section 316(a) temperature variances on the draft 303(d) list. For example, the Turtle Creek Reservoir is one of the waterbodies included on the draft 303(d) list for thermal impairment even though the Hoosier Energy facility (Merom Generation Station) on the reservoir has obtained a Section 316(a) temperature variance. (IWQC)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs.

Comment: Hoosier Energy has requested but not yet received information from IDEM concerning the basis for listing Turtle Creek Reservoir on the 303(d) list, and without that information, valid comment cannot be made on the listing; therefore, it is requested that comments be allowed to be submitted after IDEM supplies the requested information even if it is after the May 29, 2002 comment period deadline for the draft 303(d) list. (HEREC)

Response: IDEM considers all comments whether or not they are made during an official comment period that was announced in the Indiana Register. The comments that are summarized in a "Summary/Response to Comments" document are those that were received in writing during the comment period as established in the Notice published in the Indiana Register. In regard to the listing of Turtle Creek Reservoir on the draft 2002 303(d) list, under the consolidated listing methodology, it is believed that other pollution control requirements are reasonably expected to result in the attainment of the water quality standard. This waterbody has been removed from the 303(d) list (Category 5) and has been placed in Category 4B.

Comment: The primary use of Turtle Creek Reservoir is, and has been since Hoosier Energy constructed it, for supplying and cooling water for Hoosier Energy's steam generation operations. If IDEM had properly considered this primary cooling water use of Turtle Creek Reservoir as required by Section 302(a) of the Clean Water Act, then it should not have been included on the draft 303(d) list of impaired waters. IDEM apparently focused on the uses of the reservoir for fish, wildlife, or recreation which are secondary to the intended use of the reservoir for industrial purposes of supplying cooling water for steam generation. Any impact from heat on Turtle Creek Reservoir from the inevitable production of heat from steam generation is entirely consistent with the use of the reservoir so the reservoir in fact is not impaired at all but is performing exactly the use and purpose for which it was built. Hoosier Energy has exclusive and unrestricted right to the use of Turtle Creek Reservoir and its water according to the contract entered into with the state of Indiana at the time of construction. The contract with the state, dated September 8, 1978, sets forth conditions under which the public will be allowed access to the reservoir and, therefore, establishes limits on IDEM's apparent designation of the reservoir for fish, wildlife, or recreation. Inclusion of Turtle Creek Reservoir on the 303(d) list and any TMDL or other restrictions on temperature in the reservoir would constitute a breach of the contract between Hoosier Energy and the state of Indiana. (HEREC)

Response: In regard to the listing of Turtle Creek Reservoir on the draft 2002 303(d) list, under the consolidated listing methodology, it is believed that other pollution control requirements are reasonably expected to result in the attainment of the water quality standard. This waterbody has been removed from the 303(d) list (Category 5) and has been placed in Category 4B. IDEM will continue to address this temperature problem with other programs.

Comment: The 303(d) listing of Turtle Creek Reservoir appears to be based solely on impacts to fish in the reservoir, but even if the listing were the result of consideration of thermal

impact, it would be contrary to EPA's recommendation to "translate the applicable narrative criteria on a site-specific basis or through adoption of site-specific numeric criteria" as stated in the EPA Fish Advisory Guidance. For this reason in combination with not meeting the state's ascertainable standards, the 303(d) listing of Turtle Creek is not justifiable. (HEREC)

Response: All waters in Indiana (except for those specifically exempted) are designated to support the attainment of a well-balanced, aquatic community. The water quality standards in 327 IAC 2-1-6(a)(1) are designed, in part, to protect aquatic life. IDEM has been presented with information indicating that a well-balanced aquatic community does not exist in Turtle Creek reservoir and that the narrative water quality criteria may have been violated. The purpose of adopting specific numeric criteria is to protect the designated use; here it already appears that the designated use is not being met, so there is no need to develop specific numeric criteria before listing the water body. Therefore, the listing of Turtle Creek Reservoir as impaired is in accordance with state (and federal) law. However, the three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs.

Comment: Inclusion of Turtle Creek Reservoir on the 2002 303(d) list is inconsistent with IDEM's response to comment in 1998 stating that EPA does not require the listing of waters if problems have been identified and are currently being addressed. Hoosier Energy has a pending administrative proceeding concerning the alleged thermal impact on Turtle Creek Reservoir from Hoosier Energy's discharges; therefore, Turtle Creek Reservoir should not be included on the 2002 303(d) list. The resolution of the administrative proceeding pending before the Office of Environmental Adjudication very likely will result in Hoosier Energy undertaking certain steps and demonstrations to show that the water quality of the reservoir and the fish population and vegetation in the reservoir are not being negatively impacted by thermal loading from Hoosier Energy's discharges. Until resolution of the pending administrative action occurs, 303(d) listing of Turtle Creek Reservoir is premature. (HEREC)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir. IDEM will continue to address these temperature problems with other programs.

Comments Specific to Listings of Impaired Waters–Grand Calumet River and Indiana Harbor Canal

Comment: On the 2002 303(d) list, the Grand Calumet River (GCR) and Indiana Harbor Canal (IHC) have been delisted for lead and copper in the East Branch of the river, lead and dissolved oxygen in the West Branch of the river, lead and dissolved oxygen in the Indiana Harbor Canal, and dissolved oxygen in the George Lake Branch of the canal. The quality of the river and canal have undoubtedly improved over the years due to the efforts of concerned entities as well as improvements by industrial and municipal dischargers. However, in the absence of specific actions taken to correct the impairment by a parameter and due to the questionable sufficiency of data to prove the correction of the impairment, IDEM should be very conservative

in its delisting decisions. (GCTF)

Response: A review of at least five years of IDEM monitoring data and also of data collected for the TMDL project demonstrate no violations of current water quality standards for copper, lead, or dissolved oxygen. This data meets criteria established by program staff for delisting.

Comment: Numerous parameters of impairment in the GCR and IHC are being proposed for reclassification into Category 4B, a listing for impaired or threatened waters that do not require the development of a TMDL because other pollution control requirements are expected to result in the attainment of the water quality standard in the near future. IDEM has not provided the reason for moving the parameters of impairment into the Category 4B, but it is thought to be in response to the planned sediment remediation projects for these waterbodies. However, only the canal channel has a firm plan for sediment remediation, and this plan is for navigational dredging but not for environmental dredging. Contaminated sediments will remain both below and to the sides of the proposed dredging. The navigational dredging is not scheduled to begin until 2005 with completion not anticipated until about 2012. This dredging plan does not meet the required criteria of attainment of water quality standards in the near future. As for the other sections where parameters of impairment are proposed to be shifted to Category 4B, there are no firm plans or a schedule for sediment remediation in these reaches. IDEM should not move these parameters to Category 4B until firm plans with an enforceable schedule exists. (GCTF)

Response: The first five miles of the East Branch of the Grand Calumet River will be dredged this fall under a federally enforceable RCRA consent decree. For other portions of the GCR and IHC, parameters that are listed due to legacy pollutants in the sediments, and that are not causing violations of water quality standards in the water column have been moved to Category 4B since dredging will most likely be the implementation strategy for the remainder of these stream reaches. These waterbodies will, however, continue to be monitored and assessed and will be listed according to EPA guidance in future 303(d) listings.

Comment: The West Branch of the GCR, the Indiana Harbor, and the IHC main channel should also be listed as impaired for oil and grease along with all other sections of the GCR which are listed as impaired for this parameter on the 2002 draft 303(d) list. In a recent presentation of the CARE Committee, project managers showed slides of severe contamination in the main canal as well as the George Lake branch canal. The severity of the contamination and the presence of leaking oil pipelines would seem a likely indicator that oil is making its way up to the harbor. The odor of petroleum coming from the sediments and banks of the West Branch of the GCR is strongest in the section between the canal and the discharge channel of the East Chicago wastewater treatment plant; the west branch of the river is also impaired with oil and should be listed as such. (GCTF, SDC)

Response: IDEM welcomes and will review any data submitted to support or refute a waterbodies listing on Indiana's 303(d) list, provided it meets IDEM's Quality Assurance/Quality Control requirements, and is submitted in an acceptable format. Data (including documented observations) may be submitted to IDEM at any time for review and revision of water quality assessments.

Comment: Ispat Inland (II) and USS Gary Works (USS) have been stakeholders involved in the development of the TMDL in response to the 1998 303(d) listing. Data or document errors were made during the 1998 303(d) listing process without a mechanism to determine if impairment was real and whether a TMDL was warranted for a parameter in question. Similarly concerning the 2002 303(d) list, technical clarity and documentation of decisions are sparse thereby making a path forward to manage the Grand Calumet River (GCR) watershed problematic. The reasons and rationale for the listing of parameters are lacking so that the setting of goals for improvement is futile. (ADV)

Response: It is IDEM's goal to make CWA Section 305(b) water quality assessments and 303(d) listing decisions based on data and information representative of water quality, and that follows EPA guidance. All waterbodies that are listed on the 2002 303(d) list complies with the listing methodology document that will be submitted to EPA along with the 2002 303(d) list. IDEM also accepts data and information from external parties at any time for review, and would be glad to evaluate any data submitted that supports or refutes a listing decision.

Comment: IDEM has changed the segmentation of the GCR from the 1998 303(d) listing without explaining the rationale. Specifically, IDEM has created two separate reaches in the East Branch of GCR, but this boundary besides being difficult to locate on a map, has no hydraulic, hydrologic, or in-stream monitoring significance. It is requested that IDEM go back to the 1998 segmentation unless justification is presented for review and comment prior to finalization of the 2002 303(d) list. (ADV)

Response: The 1998 303(d) list was created without the use of a Geographic Information System to exactly pinpoint were a waterbody segment would began and end. Waterbody segments were located spatially using geographic reference points such as Cities or roads. Any changes that were made for the 2002 listing more clearly delineate these stream segments using GIS and EPA's stream reach and hydrologic unit areas categorization scheme. The impact on the regulated community should not change. The TMDL process itself will determine pollutant source and will allocate loads accordingly. Waterbody segments are split whenever the CWA Section 305(b) assessment is no longer homogeneous. In this particular case, the down stream segment does not fully support recreational use. The downstream segment receives input from combined sewers, whereas the upstream segment does not. The downstream segment has been assigned a new waterbody segment that begins just west of Interstate 90 interchange 13.

Comment: It appears that IDEM compiled water quality data from the IDEM fixed station monitoring program, but it is not clear whether in-stream monitoring data from other valuable resources have been considered. A comprehensive and complete reference list of all data resources should be provided with an explanation as to which databases were used and the reason for inclusion or exclusion of databases. IDEM should publish the entire compiled database that was used to conduct the 2002 303(d) assessment and should include all valid and representative data on the GCR and IHC before finalizing the 303(d) list of parameters. (ADV)

Response: IDEM considers all data submitted for listing/delisting purposes provided it meets IDEMs Quality Assurance/Quality Control requirements and is submitted in an appropriate format. Requested data has been made available and will continue to be from IDEM if requested.

Comment: IDEM should document the period of record used for the compiled water quality databases and confirm that the databases are representative of GCR and IHC conditions prior to finalizing the 2002 303(d) list. IDEM provided no explanation of the period of record or why data between 1991 to 1996 are considered representative for the 2002 listing. IDEM should not use data referenced in the 1998 303(d) listing, particularly given that IDEM has issued permits since 1994 with reduced discharge limits on some of the parameters proposed to be on the 2002 303(d) list. Additionally, method detection limits have changed dramatically since 1996, and the form of metals and cyanide used to defined aquatic life water quality have changed since Indiana's adoption of the Great Lakes Initiative (GLI) in 1997. (ADV)

Response: Water quality assessments are done by evaluating and coordinating data from site specific chemical (water, sediment and fish tissue), physical (habitat, flow data), and biological (fish community, macroinvertebrates, and E. coli) monitoring of Indiana's rivers, streams, and lakes. Chemical data for toxicants [total recoverable or dissolved metals, polynuclear aromatic hydrocarbons (PAHs), pesticides, ammonia, and cyanide], conventional water chemistry parameters (dissolved oxygen, pH, temperature, and anions), and bacteria (E.

coli) were evaluated for compliance with Indiana's Water Quality Standards (327 IAC 2-1-6 and 327 IAC 2-1.5-8). USEPA 305(b) Guidelines were applied to sample results. [Guidelines for Preparation of the State Water Quality Assessments (305[b] Reports) and Electronic Updates: Supplement. Washington, DC]. Data was considered valid for assessments if the data were no more than five years old, or were still considered representative of current conditions. Fish tissue data and surficial sediment results used for fish consumption advisories may be older than five years, and such data will be considered evaluated and included in Category 3, but not on the 303(d) list (Category 5). IDEM has described the methodology utilized for the 2002 listing in its' Listing Methodology Document which will be submitted to EPA, along with the 2002 303(d) list.

Comment: IDEM appears to have no clear, defined, logical process or rationale for comparing compiled water quality data to water quality criteria which consequently makes preparation of constructive comments of the 303(d) list difficult. IDEM's "Draft Assessment and Listing Methodology" of April 24, 2002, states that water quality data were to be evaluated for exceedances of the Indiana water quality standards inside the Great Lakes Basin, but it should be noted that duration of exceedance relative to the in-stream criteria does not appear to be considered nor the return interval of the criteria. (ADV)

Response: IDEM has described the methodology utilized for the 2002 listing in its' Listing Methodology Document which will be submitted to EPA, along with the 2002 303(d) list.

Comment: For the proposed headwaters #8a segment, how was impairment determined for cyanide and ammonia especially relating to magnitude of exceedance, frequency of criterion exceedance, and avoidance of a Type I error if impairment was determined by the frequency of criterion exceedance? (ADV)

Response: Indiana follows US Environmental Protection Agency guidelines for making Clean Water Act Section 305(b) use support assessments. USEPA's guideline document may be found on the World Wide Web at: http://www.epa.gov/owow/monitoring/guidelines.html . See Supplement volume 2, section 3 "Making Use support Determinations" beginning on page 3-22. In general, more than one exceedance over any three-year period is considered not fully supporting aquatic life use. IDEM's goal is to base assessments on data that are representative of the quality of the water resource.

Comment: As best as can be determined from the IDEM provided water quality databases concerning the East Branch GCR (#8b), cyanide, cadmium, and zinc did not exceed water quality criteria at any time during 1998 to 2000. As well, cadmium was not cited in the 2002 305(b) assessment, and, though zinc was cited, there is no known supporting rational. IDEM should remove cyanide, cadmium, and zinc from the list unless the rationale for listing this parameter as a cause for impairment can be provided for review and comment prior to finalization of the list. (ADV)

Response: IDEM's goal is to make use support decisions based on representative data that is existing and readily available. IDEM has moved cadmium and zinc to Category 3. Cyanide will remain on Category 5 until the ongoing TMDL is finished and the recommendations on cyanide are spelled out in the final TMDL report.

Comment: IDEM should provide the comparison of analytical results specific to an individual polyaromatic hydrocarbons (PAHs) and the water quality criterion for that specific PAH. Not all PAHs exhibit the same type or magnitude of toxicity, and there is no evidence that the presence of one PAH means that all PAHs are present in a waterbody. IDEM should list impairment based on a specific compound not for a chemical family. There is neither an analytical method for total PAHs nor a water quality criterion for total PAHs. IDEM should not use PAHs but should list the specific PAH chemical compound prior to finalizing the 303(d) list. (ADV)

Response: The water quality standard for PAHs, both inside and outside the Great Lakes Basin, is for total PAHs (327 IAC 2-1-6, 327 IAC 2-1-5.8). PAHs are analyzed not as a group, but as individual compounds. However, the quantities of PAHs found in various matrices, based on the water quality standards for total PAHs, are always expressed as one number.

Comment: Prior to finalizing the 303(d) list, IDEM needs to provide justification in support of the proposal to move PAHs, cadmium, and zinc to Category 4B as indicated in the April 24, 2002 draft methodology. (ADV)

Response: The first five miles of the East Branch of the Grand Calumet River has been moved to category 4B, since it will be dredged this fall under a federally enforceable RCRA consent decree. Since dredging will most likely be the implementation strategy for the remainder of the stream reaches, the parameters that are listed due to problems with the sediments (legacy pollutants) that are not causing violations of water quality standards in the water column will be moved to Category 4B. These waterbodies will continue to be monitored and assessed and will be listed according to EPA guidance in future 303(d) listings.

Comment: Unless rationale for the measurement and determination of metals impairment in the IHC main channel (#11a), is provided for review and comment, it is requested that metals be removed from the list as an impaired parameter. (ADV)

Response: CWA Section 305(b) assessment of this waterbody included review of metals in the sediment. Waterbodies with results above the probable effects concentration and having some indication of adverse biological or toxic response were classified as not supporting aquatic life use. Probable effects concentration values used were those reported in Ingersoll, C.G. and D.D. MacDonald. 1999. "An Assessment of Sediment Injury in the West Branch of the Grand Calumet River". MacDonald Environmental Sciences Ltd. Ladysmith, British Columbia.

Comment: Did IDEM evaluate the IHC main channel (#11a) individual PAHs to individual Tier I or Tier II water quality criteria or values, and, if so, how was impairment determined particularly for comparison to Tier II water quality values that change frequently? How does impairment relate to magnitude of exceedance and frequency of criterion exceedance, and how does IDEM avoid a Type I error if impairment was determined by the frequency of criterion exceedance? (ADV)

Response Benzo(a)anthracene and benzo(a)pyrene were identified in the sediments as documented in the information provided to Advent Group in response to their information request. Indiana does not have sediment quality criteria. Sediment results above the probable effects concentration and having some indication of adverse biological or toxic response were classified as not supporting aquatic life use. Probable effects concentration values used were those reported in Ingersoll, C.G. and D.D. MacDonald. 1999. "An Assessment of Sediment Injury in the West Branch of the Grand Calumet River". MacDonald Environmental Sciences Ltd. Ladysmith, British Columbia. IDEM's goal is to base CWA Section 305(b) assessments on results that are representative of the environmental condition of the water resource.

Comment: Concerning the IHC main channel (#11a), IDEM is proposing to move PAHs to Category 4B as indicated in the April 24, 2002 draft methodology, but no suggestions have been provided on the pollution control techniques that are to be implemented in support of this action. (ADV)

Response: Dredging will most likely be the implementation strategy for this stream reach, and the reason for listing this in Category 4B. This waterbody will continue to be monitored and assessed, and will be listed according to EPA guidance in future 303(d) listings.

Comment: How was the Indiana Harbor (#11b) cyanide impairment determined especially relating to magnitude of exceedance, frequency of criterion exceedance, and avoidance of a Type I error if impairment was determined by the frequency of criterion exceedance? (ADV)

Response: Indiana Harbor was included as #11 on Indiana's 1998 Section 303(d) List.

However, it was determined that the data was questionable. Therefore, the Indiana Harbor will not be listed for cyanide, but will be put in Category 3 which indicates that more data is needed to make a proper evaluation.

Comment: Cyanide has not been shown as cause of impairment in the IHC proper and there is concern that IDEM is basing the conclusion of cyanide impairment on a sampling site not representative of actual in-stream conditions. An evaluation of cyanide data collected at the mouth of the Indiana Harbor, including potential impacts of the former LTV Outfall 011 mixing zone to IDEM's Fixed Station IHC-0, are included with the interested party's letter so that IDEM may confirm that IHC-0 has been and is sampled beyond the zone of influence from the former LTV Outfall 011 before including cyanide on the 303(d) list as an impairment in the Indiana Harbor. (ADV)

Response: IDEM has determined that the data is inconclusive, so this situation warrants further investigation. Therefore this waterbody will be moved to Category 3 (insufficient data to make a proper 303(d) listing decision).

Comment: Concerning the Indiana Harbor (#11b), IDEM needs to reconcile the differences occurring in the monitoring data between the IDEM fixed stations and IDEM's TMDL stations and document the rationale for the reconciliation prior to finalizing the 303(d) list. (ADV)

Response: IDEM is unaware of any unexpected differences occurring in the monitoring data from the Indiana Harbor. It should be noted, the IDEM Fixed Stations and the IDEM TMDL stations are not necessarily sampled at the exact same times nor do the actual sampling locations overlap exactly.

Comment: Concerning the Indiana Harbor (#11b), E. coli is listed as an impaired parameter, but it is not considered to be so in the 305(b) assessment. How can a waterbody be impaired for bacteria yet still fully meet the primary contact designated use? (ADV)

Response: IDEM has listed the Indiana Harbor Canal-main channel for E. coli, but not the harbor itself. This is consistent with the 305(b) assessment.

Comment: Concerning the IHC — Lake George Branch (#12), IDEM needs to explain the rationale for metals and PAH impairments especially relating to magnitude of exceedance, frequency of criterion exceedance, and avoidance of a Type I error if impairment was determined by the frequency of criterion exceedance. (ADV)

Response: Lake George Branch was included as #12 on Indiana's 1998 Section 303(d) List. Polynuclear aromatic hydrocarbons (PAHs) and the listed metals were found in the sediment. Sediment results above the probable effects concentration and having some indication of adverse biological or toxic response were classified as not supporting aquatic life use. Probable effects concentration values used were those reported in Ingersoll, C.G. and D.D. MacDonald. 1999. "An Assessment of Sediment Injury in the West Branch of the Grand Calumet River". MacDonald Environmental Sciences Ltd. Ladysmith, British Columbia. Statistical error is usually calculated to evaluate analytical precision and accuracy. The question to be answered here is whether the results are representative of the environmental condition of the water resource. IDEM always follows EPA rationale for metals and PAH impairments. IDEM has a stringent quality assurance and quality control program based on EPA methodologies to insure that the chance of error is negligible.

Comments Specific to Listings of Impaired Waters–Little Calumet River

Comment: In response to Bethlehem Steel's request for information concerning seven proposed designations of impairment of the Little Calumet River, IDEM provided an Excel spreadsheet listing pesticide results. The data in this spreadsheet flatly contradict IDEM's designation of pesticides as a parameter of concern for impairment for the Little Calumet River.

The sample results at Porter, Indiana show non-detect results for all but a few constituents, none of which are present in concentrations above IDEM's water quality standards for the Great Lakes Basin. Based on this data, the portion of the Little Calumet River in Porter County, including the East Branch, should be re-designated as attaining the water quality standard for pesticides. (BETH)

Response: IDEM was in the process of sending Bethlehem Steel data as it was compiled. This waterbody was on the 1998 303(d) list for pesticides. Additional data is now available and IDEM has reviewed the status of Little Calumet River segments concerning pesticides. IDEM will recommend that this portion of the Little Calumet River be de-listed for pesticides.

Comment: IDEM did not provide any requested data concerning biotic communities and should, therefore, withdraw the proposed designation of portions of the Little Calumet River as impaired for biotic communities and reclassified as either in attainment or as insufficient data. (BETH)

Response: Much of the information was presented at a meeting with officials representing Bethlehem Steel and Midwest Steel August 8, 2002. The remaining material has been forwarded to a representative of Bethlehem Steel and Midwest Steel. This information for the Little Calumet River supports putting these waterbodies on IDEM's 303(d) list (Category 5).

Comment: As well as withdrawing the impairment designation for the Little Calumet River, IDEM should clarify that the proposed designation made on the 303(d) list was limited to the portion of the river from Porter to Chesterton just as it was listed on the 1998 303(d) list. (BETH)

Response: The 1998 303(d) list was created without the use of a Geographic Information System to exactly pinpoint where a waterbody segment would began and end. Waterbody segments were located spatially using geographic reference points such as Cities or roads. Any changes that were made for the 2002 listing more clearly delineate these stream segments. The impact on the regulated community should not change. The TMDL process itself will determine pollutant source(s) and will allocate loads accordingly.

Comment: IDEM did not provide any requested data concerning the 1998 fish catch advisory (*sic,* fish consumption advisory); therefore, the proposed designation of the Little Calumet River as impaired for fish consumption should be withdrawn based on the absence of supporting data. Portions of the Little Calumet River near the Burns Harbor Division (BHD) of Bethlehem Steel are designated trout and salmon streams under 327 IAC 2-1.5-5(a)(3)(B). BHD has worked hard to support these designations and to encourage public access for fishing in these areas where feasible. Nearby portions of the Little Calumet River are also designated as Outstanding State Resources Waters; these biologically vibrant waters should not be designated as impaired and, thereby, subjected to a decade or more of study under the TMDL program. (BETH)

Response: Supporting data for a decision to list the Little Calumet River and Burns Ditch in the Indiana Fish Consumption Advisory have been provided to the interested party. The information was presented at a meeting with officials representing Bethlehem Steel and Midwest Steel August 15, 2002. This information supports putting these waterbodies on IDEM's 303(d) list (Category 5).

Comment: Why is the Little Calumet River not listed as impaired for temperature despite experiencing temperature exceedances? (CR)

Response: According to 327 IAC 2-1.5-8d, temperature must stay within certain parameters unless the exceedance(s) is due to natural causes. IDEM does not have data showing a violation due to anthropogenic sources. IDEM invites all entities to submit data concerning the quality of any Indiana streams. If data that meets IDEMs QA/QC requirements are available that supports or refutes a listing, IDEM will be glad to evaluate this data.

Comments Specific to Listings of Impaired Waters–Burns Ditch

Comment: It is not plausible for Burns Ditch to be listed for the parameter of impaired biotic communities when it is able to support thriving populations of the sensitive fishes, trout and salmon, that must swim first through Burns Ditch before reaching the Little Calumet River which is a designated trout and salmon stream. For this reason and because IDEM provided no data on biologic impairment in response to Bethlehem's request, the designation of impaired biotic communities for Burns Ditch should be removed.

Response: IDEM reviewed the data, and has determined that Burns Ditch is impaired for biotic communities. It should be kept in mind that just because there are exotic salmon and trout does not mean that a healthy biotic community exists. The salmon and trout in these waters are not naturally reproducing but are stocked and imprinted for the purpose of fisheries recreation.

Comment: The designation of Burns Ditch as impaired for pesticides should be changed to attaining the water quality standard based on the data provided by IDEM that show all concentrations of atrazine to be below the state's water quality standard for the Great Lakes Basin and isolated values for dimethylphthalate, isophorone, methoxychlor, and naphthalene all between one and three orders of magnitude below the lowest water quality standard. (BETH)

Response: This waterbody was on the 1998 303(d) list for pesticides due to organo-chlorine pesticides in fish tissue. Additional data is now available, and IDEM has reviewed the status of Burns Ditch for pesticides. IDEM will recommend that Burns Ditch be de-listed for pesticides.

Comment: Burns Ditch should not be listed as impaired for cyanide according to the data provided by IDEM that show non-detect values for free cyanide, and, of the more than three hundred reported values for total cyanide, more than ninety-five percent of these values are non-detect with a handful of reported values slightly above the quantitation limit. (BETH)

Response: Burns Ditch in Porter County will be recommended for delisting for cyanide due to fixed station data that indicates that the impairment no longer exists. However, there are no new cyanide data for Burns Ditch in Lake County that would justify delisting.

Comment: The 1998 303(d) listing of Burns Ditch for lead and for fish consumption advisory due to PCB and mercury should not be continued on the 2002 303(d) list though IDEM has responded to inquiry that the absence of these listings was a typographical error. No supporting data were supplied regarding PCB or mercury. The spreadsheet data provided show all values for dissolved lead to be below the quantitation limit and most reported values for total lead were less then the quantitation limit with the remainder of values only slightly above this limit. (BETH)

Response: Burns Ditch was listed on the 1998 303(d) list for lead. Additional data is now available, and IDEM has reviewed the status of Burns Ditch for lead. IDEM will recommend that Burns Ditch be de-listed for lead. Data regarding listings for fish consumption advisories driven by PCBs and/or Mercury are available, and supports its' listing on the 2002 303(d) list.

Comment: The identification of Burns Ditch has been changed from the 1998 303(d) list. IDEM has responded to Bethlehem's inquiry by stating that it did not intend to change the portion of the waterbody being listed. This aside, the Porter County portion of Burns Ditch is a biologically healthy water and should not be listed as impaired. (BETH)

Response: IDEM welcomes and will review any data submitted to support or refute a waterbodies listing on Indiana's 303(d) list, provided it meets IDEM's Quality Assurance/Quality Control requirements, and is submitted in an acceptable format. IDEM's data indicates that Burns Ditch is impaired for E. *coli*, Impaired Biotic Communities, and Fish Consumption Advisories for PCBs and Mercury.

Comment: Why is Burns Ditch not listed as impaired for temperature despite

experiencing temperature exceedances? (CR, SDC)

Response: According to 327 IAC 2-1.5-8d, temperature must stay within certain parameters unless the exceedance(s) is due to natural causes. IDEM does not have data showing a violation due to anthropogenic sources. IDEM invites all entities to submit data concerning the quality of any Indiana streams. If quality data are available that support or refute a listing, IDEM will be glad to evaluate this data, provided it meets IDEMs Quality Assurance/Quality Control requirements, and is submitted in an acceptable format.

Comments Specific to Listings of Impaired Waters–Portage Burns Waterway

Comment: The Portage Burns Waterway did not appear in the 1998 303(d) list but is listed three times in the 2002 303(d) list. In response to Bethlehem's request, IDEM stated that part of new designation may be due to the new naming convention; however, no data supporting the new designation were provided. Therefore, the designation of impairment should be deleted or replaced with a designation of insufficient data. (BETH)

Response: This waterbody was included as #2, Burns Ditch, on the 1998 303(d) list. It is now defined as Portage-Burns Waterway. Data indicates that Portage-Burns Waterway is impaired for the following: E. *coli*, Impaired Biotic Communities, and Fish Consumption Advisories for PCBs and Mercury. This data is available upon request.

Comment: According to 327 IAC 2-1.5, the Great Lakes Initiative, the Portage Burns Waterway is included in the definition of the open waters of Lake Michigan consistent with federal definitions. If the waterway is considered part of Lake Michigan for purposes of water quality standards, then it is logical the waterway should not be distinctly listed on the 303(d) list and certainly should not be listed for more contaminants than Lake Michigan. (BETH)

Response: The 303(d) listing may specify portions of a waterbody that are impaired for certain parameters. 40 CFR 130.7(a) refers to water quality limited "segments", not just "water bodies".

Comments Specific to Listings of Impaired Waters in Lake, Porter, and LaPorte Counties

Comment: E.coli is listed as a parameter of concern for portions of the Little Calumet River, Burns Ditch, Portage Burns Waterway, and the Lake Michigan shoreline in Lake, Porter, and LaPorte Counties. The spreadsheet data provided by IDEM concerning E. coli are approximately a decade old and show a trend of significant improvement over time. Combined sewer overflow (CSO) control plans are in place in these three counties, and IDEM's E. coli task force has been attending to the problem of E. coli over the last four years. Therefore, the E. coli designation for waterbodies in these three counties should be changed from impaired to control requirements are reasonably expected to result in attainment. However, IDEM has responded to Bethlehem's inquiry by suggesting that the CSO control plans will be reviewed by consultants only as part of the development of TMDLs for Lake Michigan and the other waterbodies in the area. IDEM may not simply ignore the years of work that have gone into control of E. coli. (BETH)

Response: Additional data collected locally by the Interagency Task Force on E.coli and also by IDEM in 2000 indicate that other sources beyond Combined Sewer Overflows contribute to bacterial impairments in these waterbodies. In addition, Long-term CSO control plans have only been submitted by two of the CSO facilities in the Lake Michigan basin and these plans are currently under review. Finally, TMDLs for *E. coli* are already underway in these particular waterbodies.

Comments Specific to Listings of Impaired Waters–West Fork of the White River in Pike, Gibson, and Knox Counties and the Wabash River

Comment: Impaired biotic communities is listed as a parameter of concern for portions of the West Fork of the White River in Pike, Gibson, and Knox Counties. Hoosier Energy has requested but not received information from IDEM concerning the basis for this listing and cannot possibly comment before the May 29, 2002 comment period deadline. Therefore, a thirty day comment period extension is requested in order to submit comments on the complete information. (HE)

Response: IDEM considers all comments whether or not they are made during an official comment period that was announced in the Indiana Register. The comments that are summarized in a "Summary/Response to Comments" document are those that were received in writing during the comment period as established in the Notice published in the Indiana Register. The listing of the West Fork White River in Pike, Gibson, and Knox counties is from the 1998 303(d) list, and was based on a biological assessment conducted by Thomas P. Simon for the U.S. Environmental Protection Agency. This publication has been made available to Hoosier Energy.

Comment: The many concerns about the EPA fisheries reports prepared by Tom Simon upon which the classification of impaired biotic communities was determined for the West Fork of the White River in Pike, Gibson, and Knox Counties and the Wabash River leads to the belief that this listing is in error. The EPA studies concerning the Index of Biotic Integrity (IBI) scores contained catch number inconsistencies, poor spatial and temporal coverage, and inadequate data to allow accurate determinations of water quality classifications and, thus, could not possibly indicate with any degree of accuracy the location of impacts or the overall health of rivers. It is recommended that IDEM withdraw the impairment listing for these waterbodies. (HE, CP)

Response: The referred documents were the products of collections from hundreds of sites across Indiana and in all different kinds and sizes of stream. They provide us with a tool for understanding "what is expected" and what would be a unreasonable deviation from that expectation (ie. an impaired biotic community).

In response to questions raised regarding the technical validity of one of these documents (Wabash River) and adequacy of the original peer review, the U.S. EPA conducted a formal peer review in 2000. This peer review indicated that some corrections and clarification of the report would be useful. The authors and EPA developed a clarifying statement to the report that addressed the peer review comments and included an errata for the report. After this process was completed the U.S. EPA concluded that the data and conclusions drawn in the original report were "substantially accurate." EPA continues to support these reports. The primary goal of these studies was to develop biological expectations for Indiana rivers and streams based on fish communities. Since publication of these reports, additional literature has been published that addresses a variety of issues concerning biocriteria development. EPA considers these reports to be valuable products that have furthered the goals of biological assessment and criteria development for Indiana rivers and streams.

Comment: Long term monitoring on behalf of Indianapolis Power and Light (IP&L) and Hoosier Energy has showed no impairments of the biotic communities near the two power plants on the White River of these industries. The Tom Simon study is now approximately ten years old and should not be used to evaluate the use attainment of the portion of the White River near the generating stations. The more recent IP&L study done in 2000 by EA Engineering, Science and Technology show the fish communities in the mixing zone of IP&LS Petersburg and Hoosier Energy's Frank E. Ratts Generating Stations to be as healthy as the communities upstream of the plants. On the basis of these more recent studies, this portion of the White River should be classified as a Category 1 water as described by the EPA's 2002 Integrated Water Quality Monitoring and Assessment Report Guidance. (HE)

Response: IDEM will be happy to evaluate any data submitted that refutes or supports IDEMs listing decisions, provided the data meets IDEMs Quality Control/Quality Assurance requirements. The data IDEM has evaluated indicates that much of the White River is impaired for biological communities.

Comment: The thermal impairment listed for the Wabash River downstream from Cinergy's Cayuga and Wabash River generating stations must be considered to be incorrect and should be withdrawn. Both of these generating facilities have partial 316(a) variances for the temperature standards and, except for a brief period during the 1999 energy emergency, have stayed in compliance with the temperature limits at each generating station. Extensive aquatic studies conducted by Cinergy biologists within the mixing zones of these generating stations show diverse and abundant fish and macroinvertebrate communities that have not been impacted by the facilities' thermal discharges. These studies were provided to IDEM during the data gathering stage of the 303(d) listing process. Given the generating stations' compliance with the thermal variance requirements and the good aquatic communities present downstream from the discharges, the downstream waters should be categorized as Category 1 or 2 under the 2002 Integrated Report Guidance. (CP)

Response: The three waterbodies listed on the draft 2002 303(d) list for thermal impairments will be removed from the 303(d) list (Category 5) and be moved to Category 4B, "Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard…" These waterbodies include number 93, Wabash Generating Station to Lost Creek, number 94, Wabash River, Cayuga Generating Station to Mill Creek, and number 466, Turtle Creek Reservoir.

Comments Specific to Listings of Impaired Waters–West Fork of the White River from Fall Creek to Pleasant Run

Comment: The City of Indianapolis, Department of Public Works, has conducted a water quality monitoring program of the West Fork of the White River and its tributaries since 1991. Reviewing data collected from the city's monitoring program in comparison with EPA's 1999 Update of Ambient Water Quality Criteria for Ammonia produced no evidence of impairment due to ammonia to support the draft 2002 303(d) listing of the West Fork of the White River. According to the city's data, which is being provided to IDEM, no exceedance of either the 1999 chronic or acute ammonia criteria have occurred in this stretch of the White River. Therefore, it is requested that the listing of ammonia impairment of the West Fork of the White River from the confluence of Fall Creek to the confluence of Pleasant Run be removed from the draft 2002 303(d) list. (INDP)

Response: IDEM re-evaluated these listings in light of the data submitted by the City of Indianapolis, Department of Public Works. IDEM will recommend that the West Fork White River from the confluence of Fall Creek to the confluence of Pleasant Run be delisted for ammonia.

Comments Specific to Listings of Impaired Waters–Eagle Creek Reservoir

Comment: It does not seem to be appropriate for Eagle Creek Reservoir, #464 on the draft 2002 303(d) list, to be listed as impaired due to taste because taste is a non-enforceable, secondary drinking water standard. Similarly, the listing of impairment for nutrients and algae are vague and need additional clarification. Both nutrients and algae may be directly linked to the taste issue, and all three parameters would more appropriately be addressed through IDEM's Drinking Water program and not through the TMDL process. (INDP)

Response: 327 IAC 2-1-3(a)(3) and (b) state, respectively, that waters used for public water supply must meet the standards for those uses at the point of withdrawal and that the most protective of these standards will apply to waters with multiple uses. Therefore, surface water quality standards for public water supply use, as found in 327 IAC 2-1-6(e)(1-5), are applicable here--including those for "(2) Taste and odor producing substances..." The Indiana Administrative Code does not appear to address or list standards which are "secondary" or "non-enforceable" in terms of water quality.

The categories of "taste" and "nutrients and algae" were chosen from a dropdown list provided in the EPA Assessment Database. These categories appeared to be the most accurate descriptions for the impairments occurring at Eagle Creek. "Taste" was chosen due to well-known complaints from Indpls. Water Co. (IWC) customers c. 2000, 2001. Taste is also measurable in the laboratory as MiBs.

Documentation indicates that persistent bluegreen algae blooms in this waterbody in recent years are the source of taste complaints; "nutrients and algae" were actually selected as an impairment (or threatened impairment) here due to the recent appearance of the exotic and potentially toxic bluegreen algae species, *Cylindrospermopsis raciborskii*; which began appearing in Indiana waterbodies in recent years. It's presence in Eagle Creek during the 2001 sampling/algaecide treatment season was confirmed by Purdue University staff. All public water supply waters with confirmed presence of this potentially hazardous algae were similarly listed as threatened/impaired in the 2002 assessment cycle.

Comments Specific to Listings of Impaired Waters–St. Joseph River

Comment: In response to the 2002 303(d) list which contains listing #36, the St. Joseph River, the City of Elkhart is providing additional water quality data to be considered by IDEM. E. coli samples are collected at four locations on a weekly basis and analyzed in accordance with 40 CFR Part 136. Historical monitoring data were summarized in Elkhart's Stream Reach Characterization and Evaluation Report submitted to IDEM's Urban Wet Weather Section in September, 2000. It is requested that IDEM review and consider Elkhart's data submission to ensure that a comprehensive data set is used in making a final listing decision on the St. Joseph River. (ELK)

Response: The data for the St. Joseph River submitted by The City of Elkhart was considered when making a final decision on how to list the St. Joseph River. Applying our 2002 303(d) listing criteria outlined in IDEM's listing methodology for impaired waterbodies and Total Maximum Daily Load, a portion of the St. Joseph River was determined to be not impaired.

Comment: It is alarming that the St. Joseph River in Allen County, which is the drinking water supply for Fort Wayne, is not listed as impaired for heavy metals and pesticides despite the documentation of these parameters on reports of fish tissue sampling. (IWL)

Response: IDEM accepts data and information from external parties at any time for review. IDEM does have data for the St. Joseph River in Allen County that warrants a fish consumption advisory, but has no data that indicates that concentrations of metals and pesticides in the water column pose a threat to the drinking water supply.

Comments Specific to Listings of Impaired Waters–Eel River

Comment: It is alarming that the Eel River in Wabash and Miami Counties, #68 on the 2002 303(d) list, is impaired by cyanide which is certainly a parameter with a traceable source. Columbia City with sixteen CSOs into the Eel River system has been allowed to accept industrial

wastewater from Steel Dynamics, Inc., a facility that is, of course, only one of several likely sources of cyanide. (IWL)

Response: Current monthly water quality monitoring data from the Eel River in the Wabash County and Miami County area show the cyanide impairment no longer exists. This stream segment will therefore be delisted for cyanide. However, monthly water quality monitoring in this area of the Eel River will continue.